DOCUMENT RESUME

ED 415 440 CE 075 698

TITLE	School-to-Work Jump-Start Equity Kit.
INSTITUTION	Education Development Center, Inc., Newton, MA. Women's Educational Equity Act Dissemination Center.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	1997-00-00
NOTE	130p.
AVAILABLE FROM	WEEA Equity Resource Center, Education Development Center, 55 Chapel Street, Suite 285, Newton, MA 02158-1060; 800/225-3088; fax: 617/332-4318 (order no. 2766: $15 plus $3.50 shipping for first item, $.80 each additional item).
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Career Exploration; Check Lists; *Cross Cultural Training; Disabilities; Early Parenthood; *Education Work Relationship; Females; Guidelines; Learning Activities; Mentors; *Nontraditional Occupations; Program Implementation; Secondary Education; *Sex Fairness; *Vocational Education; *Womens Education

ABSTRACT

This starter kit is a resource for state and local school-to-work (STW) directors, educators, parents, students, business and community, and economic development organizations serving all students through STW. The kit begins with four articles: "STW and Gender Equity: Opportunity for or Barrier to Economic Parity?" (Katherine Hanson, Joyce Malyn-Smith, Vivian Guilfoy); "Gender Equity: A Lens for Examining STW Issues" (Katherine Hanson); "Voluntary Industry Skill Standards: Integrated Standards and Equity" (Joyce Malyn-Smith, Vivian Guilfoy); and "Pregnant and Parenting Teens" (adapted from an article by Deborah Brake). Two sets of guidelines and seven activities for implementing equity in STW are divided into three categories: school-based learning, work-based learning, and connecting activities. The next section provides information on disaggregating the data. The next section consists of a Gender Equity and STW Fact Sheet and Women's Educational Equity Act Digests and articles: "The STW Opportunities Act" (Mary Wiberg); "Models for Serving All Students" (Jenny L. Erwin); "Mentoring in Educational Settings" (Olga M. Welch); "Learning from the Field" (Heidi Lynch); "Gender Equity in Vocational Education" (Debra J. Robbin); "Vocational Education in the School Reform Movement" (Sundra Flansburg); "Beyond Equal Access" (June Mark); and "Multicultural Education as Democratic Education" (Katherine Hanson). The next section lists 16 additional STW resources. A booklet, "School-to-Work: Equitable Outcomes," looks at gender in a multicultural context. It contains information on links between STW and gender equity and implementing gender-equitable STW, strategies, student equity-related competencies, equity checklist, and lists of 26 notes, 29 resources, and 12 organizations. (YLB)

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School-to-Work
Jump·Start Equity Kit

Inside this starter kit you will find key tools for serving all students effectively through School-to-Work (STW)

- *School-to-Work: Equitable Outcomes*
- Additional Key STW Resources
- Gender Equity and School-to-Work Fact Sheet
- Current Articles That Examine the Role of Equity in School-to-Work
- Guidelines and Activities for Implementing Equity in STW:
    - ✓ School-Based Learning
    - ✓ Work-Based Learning
    - ✓ Connecting Activities
- How to Disaggregate the Data to Ensure Success for All Students
- *WEEA Digests* on School-to-Work, Mentoring, Vocational Education, and Equity in Learning with Computers

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Why School-to-Work and Equity?

Central to the School-to-Work Opportunities Act (STWOA), passed in 1994, is that **all students have access to STW systems.** One major concern of education reform is high standards, high expectations, and equity and fairness for students from a wide range of experiences.

This ***STW Jump•Start Equity Kit*** looks at a specific part of that diversity—gender in a multicultural context—in order to help educators, private industry, parents, and policymakers ensure school-to-work initiatives can benefit the previously underserved half of our population.

In the 10 years between 1995 and 2005 women will comprise almost half the work force, with the participation of women of color representing the greatest growth. Of the 54 million employed women in the United States, 75 percent work full time. Women, like men, work because they have to. But despite their high participation in the labor force, women are still overrepresented in low-paying jobs, and STW programs have the potential to change that. Women and men with specialized technical training can expect to earn half a million dollars more in their lifetime than someone who is working at a minimum-wage job.

Who Is the *STW Jump•Start Equity Kit* for?

Jump•Start Equity Kit is a comprehensive resource for

- state and local STW directors
- educators at all levels of education
- parents
- all students
- business and community
- economic development organizations

With more families living in poverty—especially families headed by women—we need models of education and workplace support that offer opportunities to help women and their families become economically self-sufficient. Ignoring this need will push more and more women and their families into an endless cycle of poverty.

The success of the School-to-Work Opportunities Act will be measured by how well it serves all students.

Table of Contents

Articles

STW & Gender Equity: Opportunity for or Barrier to Economic Parity? 1
Gender Equity: A Lens for Examining School-to-Work Issues 5
Voluntary Industry Skill Standards: Integrated Standards and Equity 10
Pregnant & Parenting Teens 15

Guidelines and Activities

School-Based Learning

Dick and Jane Decide 17
"My Dad's a Secretary" 21

Work-Based Learning

Mentoring—Why It Is Important 24
Everyday Episodes 26
Being Male: Responsibility or Privilege? 28
Gender-Based Violence 33
Career Exploration for Women with Disabilities 35

Connecting Activities

TV—A Mirror of Reality 40
Help Your Parents Understand 43

Data Analysis

Disaggregating the Data to Ensure Success for All Students

STW & Gender Equity
Opportunity for or Barrier to Economic Parity?

Women and men with specialized technical training can expect to earn half a million dollars more in their lifetime than someone who is working at a low-skill, minimum wage job.[1] This statement alone is enough to indicate the potential of the new school-to-work transition movement to impact the lives of women and men who might otherwise be channeled into repeating the cycle of poverty. School-to-work (STW) holds promise for many, while at the same time enabling us to imagine what equitable education for all students can mean. STW, in its broadest vision, is a model for opening up the educational system through partnerships with the workplace, a model that can create access for students who have been locked out of the traditional routes to academic and economic success. STW can contextualize learning for all students; it can introduce students to a range of employment options, including careers in technology. And it can provide opportunities for students to enter and succeed in higher education.

What Is School-to-Work?

The School-to-Work Opportunities Act, or Federal Public Law 103-329 (H.R. 2884) was signed into law in May 1994. Implications for gender equity are woven throughout the Act, and opportunities abound for the development of comprehensive partnerships and curriculum that address content, pedagogy, student assessment, and the infusion of equity and diversity considerations. For example, the intent of the Act is "to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability." "All students" are defined as both male and female students from a broad range of backgrounds and circumstances, and "career guidance and counseling" programs are to be those which develop career options "with attention to surmounting gender, race, ethnic, disability, language, or socioeconomic impediments."[2]

The Act provides development as well as implementation grants to states; waivers of statutory and regulatory program requirements; direct implementation grants to communities; and direct grants to high-poverty areas. Currently, eight states have implementation grants: Kentucky, Maine, Massachusetts, Michigan, New Jersey, New York, Oregon, and Wisconsin. All other states have planning grants to help prepare for the next round of funding. However, given the current federal budget discussions, the future of STW funding is still unclear.

The Act allows programs to address local needs and respond to changes in the local economy and labor market. States and localities can build STW systems upon existing successful programs, such as youth apprenticeship, tech-prep education, cooperative education, career academies, and school-to-apprenticeship programs. The legislation also promotes the coordination of state, local, and other federal resources in order to continue the programs when STW funds end. The Act encourages the active and continued involvement of local business, education, union, and community leaders.

Each STW program must include three components:

- Work-based learning that provides a planned program of job training or experiences, paid work experience, workplace mentoring, and instruction in general workplace competencies and a broad variety of elements of an industry
- School-based learning that provides career exploration and counseling, instruction in a career major, a program of study based on high academic and skill standards, at least one year of postsecondary education, and periodic evaluations of student's academic strengths and weaknesses
- Connecting activities that coordinate involvement of employers, schools, and students, matching students and work-based learning opportunities, and training teachers, mentors, and counselors[3]

The Act defines successful completion of a STW program as a high school diploma, a certificate or diploma from a postsecondary institution and, if appropriate, an occupational skill certificate. However, as we begin to develop programs to meet the STW requirements, key concerns arise about equity and diversity. These concerns include the ability of the systems to recruit, retain, and help nontraditional students—girls, males of color, students whose first language is not English, or students with disabilities—succeed. Another concern surfacing in current discussions is whether STW is designed to channel students to high-wage technology-related occupations with little or no access to other careers such as law, education, or the arts. Additionally, the focus on the local job market needs, rather than a national/global view may not take into account the rapidly changing economy or the mobility of individuals within the United States. And, finally, as a new partnership between education and employment. STW programs need to foster a sense of mutuality, addressing concerns that this movement is not driven solely by the needs of business, but rather becomes a partnership in which both education and employment are transformed. Using the analogy of school as producer and business as consumer limits the way in which STW can be viewed and constructed. As the movement emerges, we have the opportunity for a new metaphor: one that signifies the co-construction of new knowledge and new partnerships.

Equity and STW

Because STW is grounded in successful vocational education and apprenticeship programs, there may still linger a misconception that it is a vocational education program or that it is not for all students. We risk the danger of falling into old assumptions or stereotypes that will prevent the full participation of all students. Both research and experience show young people in vocational programs do best with a wide array of support services. These services are necessary for all students—including those in traditionally academic models. Programs must meet the needs of all students, not just those perceived as being vocationally or technically oriented. If a program is perceived as one for "the forgotten half" it will become another tracking system, despite the best of intentions. STW needs to build an infrastructure for human development and productivity that includes each student.

If school-to-work programs are for everyone, programs need to pay particular attention to the needs of individuals within specific groups—students who are female, are of color, have disabilities, or who speak a language other than English. We are at a crucial point in the development of school-to-work, a point where we can draw together the best learning and experience from education, equity, community, and the workplace. As we bring this expertise together, we can evolve a new model, disaggregating the data, evaluating our efforts, and refining the work in progress. A rigorous look at how the program works for all students—for each student—provides the opportunity to build a stronger model.

Implications for Women and the Work Force

STW outcomes can be significant for women, but often this population is overlooked in the current discussions about STW. A special focus on the experiences and needs of women is called for as we do research, disaggregate data, and learn from this new initiative.

Women continue to be found in low-wage, dead-end jobs. European American women with five years postsecondary education continue to earn 69 cents for every dollar earned by males with similar education.[3] For African American women this ratio is only about 58 cents, with 54 cents for Hispanic/Latina women.[4] And, since only 4 percent of U.S. families fit the traditional model of man working outside the home, woman working in the home, with two preschool children,[5] the economic imperative for women's employment is apparent. Women contribute significantly to the family income in two-parent households: in white families women contribute 34 percent of the family income, in African American families, women contribute 50 percent, and in Hispanic families women contribute 40 percent. And, while the number of female-headed households continues to rise, their earning power is significantly less: 47 percent of white female-headed households are below the poverty line and 72 percent of African American female-headed households live in poverty.[7]

If the nation is to be truly productive and if STW programs are to be successful, the targeting and inclusion of women and girls within STW are critical. Based on the experience of vocational education and nontraditional occupations, gender equity specialists can offer guidance and resources to schools and states as they attempt to develop successful STW programs. This knowledge and approach, which covers K–16, can form the basis for highly effective STW programs.

The Act itself acknowledges this. Beginning with the initial planning for STW, states are required to include the gender equity component. For example, state implementation grant proposals must identify how the state sex equity administrator will be involved and how teachers, administrators, employers, and others will be trained to address the counseling and training needs of women, people of color, linguistic minorities, and individuals with disabilities. This provides the opportunity to introduce successful models developed in vocational education, math and science, and in gender equity as excellent resources, not simply to raise the questions within STW but to offer strategies that work.

STW & Gender Equity

Opportunity for or Barrier to Economic Parity?

A Proactive Role for Equity Specialists

Equity specialists and advocates need to be assertive in creating a role within the STW system, one in which they can help shape the conversation, provide insights into the needs of specific groups of students, and draw on the strategies and programs that have been successful in other arenas. A recent survey we conducted among the state equity coordinators revealed that STW is an emerging concern, but conversations and planning often overlook the needs of one-half the work force—women. As new collaborations between education, business, and community, many STW groups may not understand the connection of gender equity with STW. Equity specialists need to seek out key individuals within STW for discussions on how gender equity fits and how it will help enhance the program for girls and boys. As in the beginning of nontraditional careers, we need to marshall the argument, with facts, state data, and with examples of successful models. We need to offer specific help to the state or local planning group, spelling out the benefits for officials. These individuals are the entry point for equity specialists.

Key to understanding the implications of gender equity and equity for all students within STW is building a dialogue within the STW community that incorporates the rich expertise and experience of work in nontraditional occupations, math and science for girls, and other equity programs. As states and communities begin planning and implementation, equity specialists can raise a series of key questions that can help infuse equity into the process. Among these are

- How can we help ensure that all students in the programs are **provided with options leading to productive and rewarding futures?** What does it mean to say that STW is for all young people? Is it designed to help all students? How does the STW program use career exploration for all students? How do we ensure that STW explores professional careers, offers career ladders, and broadens the concept of work for all?
- **How do we ensure equal access to STW?** What do student demographics tell us about who is recruited and to which programs? What is the retention and success of individuals in specific grouping—European American males/females, African American females/males, Hispanic males/females, students with disabilities, and so on? Who is going on to community college, technical college, or university?
- **How are programs conducted?** Is the program structured so there is a proportional representation of all groups found within the school community? If not, how can this be corrected? Does it offer a career ladder option and a college option? How are students supported in the program? Does it include training on the "Right to Know" law? Does it have policies and procedures regarding sexual and racial harassment in both school-based and work-based components? How are workplaces supported and monitored to encourage equity? What adjustments need to be made to involve students with disabilities? How are the language needs of linguistic minorities addressed? How does the STW program reach out to and include the active participation of parents?
- **Is there a special focus on math and science for girls and students of color?** How does the program draw on what is known about encouraging and effectively teaching these students? Is the program utilizing proven programs such as Expanding Your Horizons or the Girls Clubs' Project SMART? How could a project such as the Algebra Project enrich STW? How will disparities in computer access, skill, and comfort be addressed both in the classroom and in the workplace? How are math and science integrated into the other disciplines?

Beyond posing the questions, equity specialists can offer suggestions for planning and implementing STW programs that meet the needs of students. Some, as suggested by Mary Wiberg, gender equity coordinator for vocational education in Iowa, include the following:

- Involve classroom teachers (academic and vocational education) in the development of STW programs.
- Involve businesses owned by women and people of color in the planning process.
- Involve community-based organizations that have worked with teen parents, gender equity programs, Girl Scouts, and others to understand how best to attract girls and to meet their needs.

- Train everyone—academic and vocational education teachers, counselors, administrators, employers, labor—in the intent of STW, including the gender equity provisions.
- Involve the elementary schools as well as middle schools to begin the process early—reaching parents and students in ways that help them value STW and nontraditional careers for students, before they are locked in to preconceptions.
- Have special events for specific audiences—expand the idea of the Non-Traditional Occupations (NTO) career fairs, provide role models, examine outreach, and target specific messages to girls, students with disabilities, the academically talented, and so on.
- Identify and provide the child care, transportation, or other support services girls, especially teen parents, might need in order for them to be in STW.
- Encourage states to invite representatives from commissions on the status of women or other human rights/advocacy groups to participate in the planning.
- Identify resources that can assist in the training and technical assistance support for white women, people of color, linguistic minorities, and persons with disabilities. The National Coalition for Sex Equity in Education (NCSEE) is one such resource. For information contact business manager, Teddy Martin at ☎ 908-735-5045.
- Encourage states to establish a subcommittee on career guidance and counseling with membership that includes elementary, secondary, and postsecondary guidance staff and persons knowledgeable about NTO strategies that can be integrated into state plans.

Equity Resources for STW

In response to the requests from state equity coordinators, the *WEEA* Publishing Center at EDC has developed a series of presentations and workshops on gender equity and STW. Additionally, as part of its new Equity in Education Series, the center has adapted existing WEEA materials into a booklet, *School-to-work: Equitable Outcomes for Girls and Boys,* that provides suggestions and resources for educators, administrators, business, and community organizations interested in STW. Information on the training, technical assistance, and booklet can be obtained by contacting the *WEEA* Publishing Center at ☎ 800-225-3088 or on the Internet at WEEAPUB@EDC.ORG.

Additional information and resources can be obtained from the regional Desegregation Assistance Centers, Regional Labs, the National Center for Research in Vocational Education (NCRVE) at ☎ 800-762-4093, or the School-to-Work Opportunity Act Information Center at ☎ 202-260-7278.

By Katherine Hanson, Joyce Malyn-Smith, & Vivian Guilfoy, Center for Education, Employment and Community, Education Development Center, Inc., (EDC)

About the Authors

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Notes

[1] *Voice.* New York State Occupational Education Equity Resource Center, March 1993.

[2] School-to-Work Opportunities Act of 1994.

[3] Legislative Fact Sheet, U.S. Department of Education, U.S. Department of Labor, prepared by the Office of Vocational and Adult Education, 1993.

[4] Bureau of Labor Statistics, 1994.

[5] Women's Bureau, Department of Labor, 1994.

[6] *Changing Roles of Men and Women: Educating for Equity in the Workplace.* Vocational Studies Center, School of Education, University of Wisconsin, Madison, WI.

[7] *Working Women Count: A Report to the Nation,* U.S. Department of Labor, Women's Bureau, 1994. *How Schools Shortchange Girls.* AAUW and Wellesley College Center for Research on Women, 1992.

Gender Equity
A Lens for Examining School-to-Work Issues

Within the next 10 years, women will comprise almost half the work force, with women of color representing the greatest growth. Of the 54 million employed women in the United States, 75 percent work full time. Women, like men, work because they have to. Fifty-nine percent of wives in married couple families are in the work force, bringing median family income to $48,169, compared with $30,075 for families without the wife in the paid labor force. Women who are single heads of households are in the labor force in even greater numbers and earn a median family income of only $16,692.[1]

Despite their high participation in the labor force, and despite having made substantial progress in obtaining jobs in high-paying managerial and professional occupations, women are still overrepresented in low-paying jobs. When comparing the median weekly earnings of full-time workers, women earn only 75 cents for every dollar earned by men ($381 for women and $505 for men).[2]

Encouragingly, the more education a woman has, the greater the likelihood she will seek employment. And, women and men with specialized technical training can expect to earn half a million dollars more in their lifetime than someone who is working at a low-skill, minimum wage job. With more families living in poverty—especially families headed by women—the nation needs to develop models of education and workplace support that offer options and opportunities that enable women to achieve economic self-sufficiency and social efficacy. Ignoring this need will push more women and their families into an endless cycle of poverty. School-to-work transition (STW) holds the potential to change this. Unfortunately, within the national discussion on school-to-work, very little has been said about the educational and social realities of the lives of women and girls, the barriers females faced based on gender-role stereotyping and expectations, or how these issues can be addressed through STW.

Examples and Lessons of STW

In its broadest vision, STW opens up the educational system through partnerships with the workplace. STW can create access for students who have been locked out of the traditional routes to academic and economic success. STW can contextualize learning for all students; it can introduce students to a range of future employment options, including but not limited to careers in technology. It can provide teachers and students with a better understanding of the demands and excitement of the workplace. And it can provide opportunities for more students to enter and succeed in higher education.

For example, the newly developed Teach Boston Program will help high school students focus on teaching careers through a combination of shadowing and tutoring experiences, summer jobs tutoring others, and by studying about education. Grounded in the classroom experience, students have the opportunity to see teaching as an evolving practice, one that is changing to meet the demands of the future. This program will result in a group of students who will graduate from high school with a clear focus and high expectations for themselves, who will attend college, and who will ultimately return to teach in a place where they bring a unique perspective on the neighborhoods and the needs of local students. This is as much a school-to-work program as one leading to a career in the biosciences or engineering and, like those, will ensure that students enter college with a degree of motivation and focus unusual among most college freshmen.

Another program, Choose Nursing, links students from one of Boston's high schools to a local hospital. Designed to increase the number of nurses of color, students participate in the daily life of the hospital, work in the different departments, are mentored by medical staff, discuss medicine with patients and staff, present information to their classes, and take the requisite mathematics and science classes that would prepare them for a career in medicine. Their teachers confer with hospital staff to better link mathematics and science instruction in the classroom to the reality of the medical field. This, too, is the essence of STW—using the world of work as the laboratory in which to learn and integrating this with the school curriculum. It is not low-level job training, but a way to expand students' ideas about the world of experience.

Another link between "real" world learning and academic achievement is exemplified in the experience of a local chemistry professor who was asked by the American Chemical Society to design a high school chemistry course for noncollege-bound students. Rather than have students memorize charts or do "college prep" work, the professor thought he would make chemistry interesting. He built the curriculum around experiments related to the use of chemistry in the communities where the students lived. The result for the students—better scores on the Advanced Placement tests in chemistry than those of students enrolled in college-prep chemistry. By making chemistry fun, interesting, and worth learning, this professor did in one class what STW can do in all—make learning worthwhile.

These programs can form the base for the systemic reform inherent within STW and carry within their design several important lessons. First, different students learn in different ways. Some learn better in more traditional classrooms where learning focuses on reading, writing, and conversation. But many other students learn better through experience. They learn by doing, whether it is applying chemistry in a neighborhood-based curriculum, teaching by tutoring a younger student while studying about education, or performing tasks in a hospital that relate directly to mathematics and science. All link students—whether they will go to college or directly to the workplace—to a broader sense of the workplace, of the relevance of what they are studying to their lives beyond high school. For many students, these experiences provide the first glimpse of a range of career possibilities never before imagined.

School-to-work remains a hotly debated issue. Supporters see it as a way to involve business and industry in redesigning education to meet the needs of the future, while critics worry that business and industry will define education to meet their employment needs rather than to meet a full range of student needs—economic, social, and civic. While many hold a vision of STW as a new concept in education reform, others describe it as a way to get "the forgotten half" into the work force. While some see STW as an opportunity to broaden access to higher education for many students of color and poor students, others view higher education solely in terms of community colleges and technical programs. Those concerned with equity cannot afford to wait; it is critical that equity concerns become central to this national debate. We need to enter the debate, offering the lessons learned in other equity arenas and becoming full partners in an effort to remove educational and economic barriers for women, people of color, and people with disabilities.

The School-to-Work Opportunities Act

The School-to-Work Opportunities Act, or Federal Public Law 103-329 (H.R. 2884) was signed into law in May 1994. Implications for gender equity are woven throughout the Act. For example, the intent of the Act is "to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability." "All students" are defined as both male and female students from a broad range of backgrounds and circumstances, and "career guidance and counseling" programs are to be those which develop career options "with attention to surmounting gender, race, ethnic, disability, language, or socioeconomic impediments."[3] Activities of the STW program are jointly administered by the departments of Labor and Education, in an effort to more closely link education and workplace in the development of the state projects.

Currently, eight states have implementation grants: Kentucky, Maine, Massachusetts, Michigan, New Jersey, New York, Oregon, and Wisconsin. All other states have planning grants to help prepare for the next round of funding. Recent budget cuts have reduced funding for STW programs and for a number of education programs, including Title IV, which funds the state sex equity consultants, and Tech Prep Programs. Although the future of STW is unclear, the School-to-Work Opportunities Act remains both as a guide to a new vision for education and as a mandate to meet the needs of all students, with a specific focus on gender equity.

States and localities can build STW systems upon existing successful programs, such as youth apprenticeship, tech-prep education, cooperative education, career academies, and school-to-apprenticeship programs. The Act encourages the active and continued involvement of local business, education, union, and community leaders. The Act defines successful completion as a high school diploma, a certificate or diploma from a postsecondary institution and, if appropriate, an occupational skill certificate. Each STW program must include three components:

- Work-Based Learning that provides a planned program of job training or experiences, paid work experience, workplace mentoring, and instruction in general workplace competencies and a broad variety of elements of an industry
- School-Based Learning that provides career exploration and counseling, instruction in a career major, a program of study based on high academic and skill standards, at least one year of postsec-

- ondary education, and periodic evaluations of students' academic strengths and weaknesses
- Activities That Coordinate involvement of employers, schools, and students, matching students and work-based learning opportunities and training teachers, mentors and counselors

Equity and STW

As states and localities develop STW plans and programs, several concerns have surfaced about equity and diversity, including

- the ability of systems to recruit, retain, and help girls, males of color, students whose first language is not English, or students with disabilities succeed
- whether STW channels students to high-wage technology-related occupations with little or no access to other careers such as law, education, or the arts
- whether a focus on the local job market needs may not take into account the rapidly changing economy or the mobility of individuals within the United States
- how, as a new partnership between education and employment, STW programs foster a sense of mutuality, guaranteeing that this movement is not driven solely by the needs of business, but rather becomes a mutual partnership in which both education and employment are transformed

Furthermore, since STW is grounded in successful vocational education and apprenticeship programs, there may be a misconception that it is yet another vocational education program or that it is not for all students. Unless this misconception is challenged, we risk perpetuating old assumptions or stereotypes that prevent the full participation of all students. Integrated into the life of the school, STW programs must meet the needs of all students, not just those perceived as being vocationally or technically oriented. If a program is perceived as one for "the forgotten half" it will become another tracking system, despite the best of intentions. Similarly, in discussing "all students" STW programs can easily overlook the needs of girls.

The School-to-Work Opportunities Act acknowledges this. Beginning with the initial planning for STW, states are required to include the gender equity component. For example, state implementation grant proposals must identify how the state sex equity administrator will be involved and how teachers, administrators, employers, and others will be trained to address the counseling and training needs of women, people of color, linguistic minorities, and individuals with disabilities. This provides the opportunity to introduce successful models developed in vocational education, mathematics and science, and in gender equity as excellent resources, not simply to raise the questions within STW but to offer strategies that work.

Gender Stereotyping and Career Expectations

Much of the early work in vocational education and nontraditional education addressed deeply held stereotypes about appropriate careers for males and females. The materials developed under grants from the Women's Educational Equity Act (WEEA) Program focused on confronting and shattering these stereotypes. Hundreds of programs around the country, supported by affirmative action and Title IX, pushed for the inclusion of women and girls in nontraditional careers. These careers—in the skilled trades, crafts, engineering, and construction—were opportunities for high wage, flexible careers.

Recently, similar concerns have surfaced about the participation of females in mathematics- and science-related careers. Mathematics and science are often the key to future economic and social well-being, opening the doors for careers in technology and the professions. Unlike nontraditional careers, the need for advanced mathematics is now often an accepted reality for girls, their teachers, their parents, and future employers. Girls are taking more mathematics and science classes in high school, are earning more degrees in related fields, but women still do not choose mathematics and science careers. STW can avoid mistakes by building on the existing models for gender equity that have been developed in both nontraditional occupation (NTO) and mathematics/science programs.

Nontraditional career programs and mathematics/science for girls initiatives also have lessons to share with STW about the impact of gender-role stereotyping. Gender-role stereotypes, on the part of students, teachers and counselors, parents, employers, and work colleagues, have long played a role in determining whether students see a career as open and inviting or as unattainable and hostile. Expectations that certain careers, like construction, mathematics, or bioscience, are "for boys" while other careers, like teaching, nursing, or administrative support are "for girls" are often unconscious or unspoken. However, they continue to shape the teaching and counseling methodologies of schools, guide parents to push boys into mathematics and science, and shape a workplace culture that does not support women in their dual roles as workers and parents.

This dual role most women play is often unrecognized by employers, colleagues, teachers, and counselors. But it is often a major consideration on the part of women and girls as they make career choices. Despite significant participation in the workplace, women are still expected to be the primary nurturer within the family. Recent surveys indicate that even in young two-earner households, women do the majority of household and child care tasks. The expectation that this "women's work" should not affect work continues to guide the structure in the workplace as well. Women often must choose between jobs that pay less, but enable them to have the flexibility to be home with children after school (since few affordable day care options exist) or jobs that require significant involvement with better pay, but risk penalties. The lesson of the recent spate of custody hearings where men sought (and gained) custody of their children because they claimed the mother was working too much has also not been lost on women and girls.

These messages continue to tell women that the workplace and society frown on their full participation and, until we begin to change the expectations not just of female students but of their male counterparts, teachers, counselors, and employers, no program will change the economic reality for most women. The workplace must also change to reflect the changing needs of workers and become both supportive of women and "family friendly."

STW and the States

As the primary movers for school-to-work, it is important to examine how the states are viewing and implementing gender equity in their state plans. We are in the process of compiling data on gender equity in school-to-work, based on review of the state plans and on interviews with state sex equity coordinators. While the potential for positive impact of female students can be seen in many of the plans, there seems to be less consideration of gender equity within the implementation of state activities. Although this research is still underway, we can point to some examples.

In some states, such as Oregon, the state sex equity coordinator reports full involvement in the STW initiative. Building on previous work in gender equity, the state is developing regional gender equity teams, cadres of trained individuals who have expertise in all reform and will help implement programs and build capacity. In states such as this, where there is a commitment to gender equity, there is already a move to consider what needs to be done on the elementary and middle school levels to build the foundation for making choices about the future.

In other states, however, equity specialists do not find themselves invited to be active participants. Many, in fact are not invited to participate at all. As one state coordinator said, "I'm not linked to STW at all. I've asked to participate but am told that 'all students' will participate and that there are 'too many' people on the advisory council now." Her concern was echoed by another state coordinator who said he "has not heard from anyone about any of the meetings that are listed in the planning grant." He, like colleagues in other states, was concerned that "there needs to be a stronger staff development component so that all educators understand the socioeconomic and gender issues in order to confront these barriers." This staff development needs to extend beyond educators to the other partners in the STW process.

While many of those interviewed felt positive about the vision of STW, agreeing that their states were seeing this as "not just voc ed, but something that extends beyond to include kids in all areas" they continued to voice a concern that STW is perceived as a labor market issue rather than an education issue. If this perception persists, the promise of STW will not be realized for STW is a collaboration between education and labor, designed to restructure education in fundamental ways so that all students do have equal access and opportunity for academic and economic achievement.

If school-to-work programs are for everyone, programs need to pay particular attention to the needs of individuals within specific groups—students who are female, are of color, have disabilities, or who speak a language other than English. We are at a crucial point in the development of school-to-work, a point where we can draw together the best learning and experience from education, equity, community, and the workplace. As we bring this expertise together, we can evolve a new model, disaggregating the data, evaluating our efforts, and refining the work in progress. A rigorous look at how the program works for all students—for each student, including each girl—provides the opportunity to build a stronger model.

Involving the Equity Community in STW

Equity specialists and advocates need to be assertive in creating a role within the STW system, one in which they can help shape the conversation, provide insights into the needs of specific groups of students, and draw on the strategies and programs that have been successful in other arenas. As new collaborations between education, business, and community, many STW groups may not understand the connection of gender equity with STW. Equity advocates need to seek out key individuals within STW for discussions on how gender equity fits and how it will help enhance the program for girls and boys. As in the beginning with nontraditional careers, we need to marshal the argument, with facts, state data, and with examples of successful models. We need to offer specific help to the state or local planning group, spelling out the benefits for officials.

Key to understanding the implications of gender equity and equity for all students within STW is building a dialogue within the STW community that incorporates the rich expertise and experience of work in nontraditional occupations, mathematics and science for girls, and other equity programs. As states and communities begin planning and implementation, equity advocates can *raise a series of key questions that can help infuse equity into the process*. Advocates can *become partners in the process*, offering for example, the organizational involvement of AAUW, the Girl Scouts, or others who have expertise in the specific needs of girls and women. We can *begin a public discussion on STW and gender equity*, organizing public events, writing articles, participating in media events, presenting at parent organizations, the Chambers of Commerce, or the local Private Industry Council. We can *reach out to those in business and industry who have made a commitment to equity in the workplace* and who can articulate the benefits of equity and diversity in our global world. We can *broaden the discussion of STW within education to include all disciplines and departments*. And we can *share the lessons of equity in mathematics and science, in vocational education, in higher education* with others who may be just starting to think about this issue.

School-to-work holds a great deal of promise for the girls and women of this country, but only if we accept our responsibility to make sure that gender equity is part of every consideration. ◆

Notes

[1] *Facts on Working Women*, No. 93. U.S. Department of Labor, Women's Bureau, June 1993.

[2] *Facts on Working Women*, No. 93.

[3] School-to-Work Opportunities Act of 1994.

[4] *Legislative Fact Sheet*, U.S. Department of Education, Office of Vocational and Adult Education, 1993.

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Originally prepared for AAUW Conference Proceedings, June 1995 ◆

Voluntary Industry Skill Standards

Integrated Standards and Equity

Need for National Industry Skill Standards

As America felt the sharp pangs of economic decline in the 70's and 80's, researchers and policymakers began to rethink our national approach to workforce development and to examine education and employment systems of other countries. The Commission on the Skills of the American Workforce (*America's Choice: High Skills or Low Wages*, 1990) found that countries experiencing economic strength and stability shared a common approach to education and work which included: a) an expectation that all students reach a high education standard; b) a "professionalized" vocational education; c) a comprehensive labor market system combining labor market information, training, job search and income maintenance for the unemployed; d) employer tax supported in-company training; and e) a national consensus on moving towards high productivity work organizations and building high wage economies.

A number of other reports helped begin a process to guide American thinking about the responsibility of the education sector to prepare young people for their futures as fulfilled adults and successful participants in the American economy. *The Forgotten Half* (Grant Foundation) made clear that 50 percent of America's youth who were in the "general track" were graduating without adequate skills to succeed in America's workplaces. *What Work Requires of Schools*, commonly called the *SCANS Report* (Report on the Secretary's Commission on Achieving Necessary Skills, 1991) identified general "workplace know-how" as five basic competencies and a three-part foundation required by all young people to meet the employment demands of America's workplaces. The five competencies specify how young people should: identify, organize, plan and allocate resources; work with others; acquire and use information; understand complex interrelationships of systems; and work with a variety of technologies. The three-part foundation includes basic skills, thinking skills, and personal qualities.

Congress propelled the issues forward by enacting the "Goals 2000: Educate America Act," which set a national agenda for reform and called for establishing a National Skills Standards Board. The Board would be charged with developing and implementing a national system of voluntary industry skill standards and certification. This parallels the federal initiative to establish national standards in math, science, language arts, and the social sciences.

National Voluntary Skill Standards: What are They?

In anticipation of the work of the National Skill Standards Board, the federal Departments of Education and Labor funded 22 National Voluntary Industry Skill Standards Projects in 1993 and 1994. The industry groups are diverse, ranging from Bioscience and Chemical Processing to Electronics and Human Services. In the first phase, each project identifies what entry-level workers need to know and be able to do to succeed in that industry.

The very term "skill standards" however, can conjure up negative images. For example, standards are often seen as a device to "screen people out" of opportunities, classrooms, or workplaces. Some see them as narrowly defined, practical, hands-on skills, for someone else's children—those who don't possess intellectual or academic abilities. Neither view is correct.

Skill Standards—if designed and used appropriately—are valuable guideposts and benchmarks. They become "output criteria" for employers as they upgrade skills of current workers, recruit new workers, and evaluate effectiveness of training. They provide structure and content for educators as they design programs and develop curriculum to encourage student achievement. They serve as a map for educators and employers as they cooperate to build effective school-to-work systems. They paint a picture for career counselors, teachers, and parents as they introduce students to the world of work. And, they offer a set of challenges for students as they begin to explore career options and prepare for their futures.

The very best skill standards will:

- engage stakeholders from industry, education, and the community in the design and validation process—developing a common language and respect for the contributions of each sector
- encourage restructuring of learning—because they focus on student mastery of both technical and academic skills through problem-solving
- create a framework for implementing alternative assessment strategies such as portfolios, products produced, oral reports, and research projects—to measure the new demands of high performance workplaces
- serve as a guide for the professional development of workplace

mentors, teachers, and workplace supervisors—all of whom will be engaged in helping learners succeed.

- promote flexibility about where learning takes place—drawing on the very best mix of workplaces, community settings, and schools
- hold everyone accountable to a higher level of student achievement for all students—promoting effective teaching and learning strategies such as cooperative and team learning and appropriate use of new technologies

Features of the Integrated Industry Skill Standards Model

EDC has developed an Integrated Industry Skill Standards (IISS) Model that draws on the best learning from education and workplace reform. The entire process and the results for the Bioscience Industry are about to be published. Two elements that have important implications for equity are the concept of a *Training Occupation* and the *IISS* itself.

The concept of a *training occupation* is commonly used in European countries to train youth apprentices. It is a fictitious construct that does not exist in the work place, but is a real outcome goal for education and training. It combines all of the knowledge, skills and attributes required to perform the full range of tasks conducted by a group of related real life occupations. By preparing for a training occupation, a person will be more extensively qualified for work in a number of different but related jobs within an industry. That person will be positioned to move into a variety of career paths. Such a cross-trained worker is more productive in a workplace where teamwork is required, or where job rotation occurs. A person prepared for a training occupation also is better able to adapt to new technologies or work systems, or to new jobs in restructured work organizations.

For example, the training occupation for the Bioscience Industry is defined as follows: The Bioscience Technical Specialist I performs experiments and assays, manufactures products, or assists with research, using a variety of technical skills under supervision. Nineteen entry level laboratory-based jobs which share a common base of skills and knowledge requirements comprise this training occupation. Some of these include: Animal Technician, Assay Analyst, Clinical/Medical Lab Technician, Cyto-prep Technician, Manufacturing Operator, Pilot Plant Operator, and Research Technician. The training occupation crosses the sectors of biotechnology, pharmaceuticals and clinical laboratories.

The *IISS* consists of a structured "scenario" which represents a typical, real-life work problem; the skills, tasks, knowledge, and attitudes embedded within that problem; and the criteria for successful mastery of those work tasks.

One of the Integrated Skill Standards for Bioscience includes the following problem:

One part of your laboratory responsibilities is to safely unpack and process biological samples. Demonstrate everything you would do to accomplish this. While unpacking samples one morning, you notice that one of the samples is leaking from the container. According to regulations, what should you do?

This problem challenges the learner to think and act. Tasks include a) take and document corrective action according to SOP or as directed; b) notify appropriate person about problems and observations; c) document communication of information; and d) maintain professional demeanor. Some of the industry related skills to be demonstrated include aseptic technique, basic laboratory procedures, recognition of environmental hazards, stress management and troubleshooting.

By focusing on the problem scenario, individuals are required to rise from demonstrating mastery of isolated tasks to demonstrating mastery within the context of a real workplace problem. This larger definition of "standard" allows for individuals with varying approaches to problem solving and task mastery to "work through to the solution" and increases the chances that they will succeed in education, training and workplaces. The scenarios are constructed deliberately to offer more than one "right way" to master a task and get the work done well.

Integrated Industry Skill Standards: Promoting Equity, Achievement & Choice

The IISS model sets forth the high and real demands of industry. It also builds on the strength of diversity by *promoting* alternative ways of learning—including the kinds of learning that research tells us holds promise for girls and students of color. The IISS model supports equity and excellence because it:

- *reflects the reality of the workplace.* Front line workers—women and men of diverse backgrounds—are involved actively in constructing the standards. Shoulder to shoulder with peers across all sectors of the industry, workers convey their excitement and pride as they identify the building blocks of the standards. In this process, they also share priority issues, difficulties, and the day-to-day concerns they face in carrying out their work. After scenarios are completed, workers validate the standards against which they are measured. Young women will have a new window on the world—to understand "what it's like" to work in promising industries that offer good income and career opportunities.

- *sets clear, high expectations*. Everyone agrees that having high expectations for all students, and particularly for women in math and science-related occupations is a critical variable in student success. But what does that mean? The IISS standards provide a clear set of expectations that are visible, concrete, and recognized by industries—something that everyone can see and understand. The IISS model offers a much more inviting way for girls and women to "see" what is expected and to relate that to their own interests and talents. It also helps "gatekeepers" to learn about the industry and what it requires. Often, counselors, teachers, and parents are not aware of the kinds of the unique problems being solved in various industries or of the common problems that show up across industries. As a result they often "persuade" girls and women to think narrowly about career choices—with the net effect of lowering student expectations, and limiting student participation in important courses such as algebra and science.
- *increases options*. Providing young people with a broad set of industry skills that demand both academic and applied learning will enable them to move directly to work settings, to higher education and training programs, and/or across industry sectors. This opens up futures, especially for girls and minorities who are often tracked into programs that restrict opportunities for succeeding in higher level mathematics and science or for acquiring the necessary background for college entry—especially in demanding technical courses and careers. As a result, girls and people of color are "left out" or spend endless time "catching up." Drawing the integrated standards back into the high school curriculum allows students to participate in *any* industry cluster and be fully prepared to take full advantage of the wide array of options and choices available in our highly technical workplaces and in higher education.
- *encourages new teaching and learning strategies*. The integrated standards recognize and accommodate diverse learning styles and multiple intelligences, often untapped by teachers. They encourage students to pursue alternative ways to pose and solve problems, display their talents, use their own special ways of thinking, and demonstrate competency—individually and in teams. It draws on the research that tells us how to involve girls effectively in the classroom and build on their strengths. As a result, the model also influences teachers to learn new pedagogies and broaden their own repertoire of teaching styles.
- *provides rich content, context and meaning*. The standards are context-rich. The scenarios reveal the "energy" of the workplaces, the discovery process, and how people must keep learning at the workplace to hone their skills and respond to changing environments. Students can "find" themselves in these real situations. The development of challenging math, science, social studies and communication skills embedded in the scenarios give all students a solid grounding in both technology and liberal arts. Giving girls an opportunity to find their own meaning in this rich landscape—rather than mastering isolated tasks—will provide a more balanced environment in which they can thrive and succeed.
- *develops high-performance workplace skills*. Everyone is trying to move toward the concept of high performance workplaces where continuous quality improvement and flexibility are key values and the employee is considered the most valuable asset. Essential elements of the IISS model are teaming, problem—based learning, constructivist learning, contextual learning, higher-order thinking and cooperative learning. Coincidentally, these are the very "ways of

learning" that come more easily to girls and women—and are often missing from many classrooms and workplaces.

- *invites alternative assessments.* Standardized tests are only one way of measuring progress. The IISS model demands that we rethink how and when students can demonstrate what they know and what they can do. These include written and oral reports, technical papers, projects, presentations and portfolios, computer simulations, panel reviews by employers and educators, and continuous evaluation and feedback loops. The IISS model invites students to present their accomplishments and meet standards in a variety of ways. If the standard is mutually acceptable and acknowledged by teachers, industry, labor, and higher education gatekeepers, there will be fewer surprises when girls and women apply for jobs or college entrance. The work they have done will be valid and portable.

Integrated Industry Skill Standards provide a unique opportunity to frame education and training programs in new ways, not only to create a high skilled technical workforce, but to ensure that equity and diversity are not lost in the economic reform agenda. ◆

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Published in AAUW Proceeding, *June 1995.*

National Skill Standards Projects

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Advanced Manufacturing	C.J. Shroll Sally O'Dowd 202-662-8965	FIM 1331 Pennsylvania Avenue, NW Ste. 1081, North Tower Washington, DC 20004-1703
Agricultural Biotechnology	Bernard L. Staller 703-360-3600	National FFA Foundation P.O. Box 15160 Alexandria, VA 22309-0160
Air-Conditioning, Heating and Refrigeration	Victor Harville 800-248-7701	Southern Association of Colleges and Schools 1866 Southern Lane Decatur, GA 30033
Automobile, Autobody, and Truck Technician	Patricia Lundquist 703-713-0100	National Automotive Technicians Education Foundation 13505 Dulles Technology Drive Herndon, VA 22071-3415
Bioscience	Judith Leff Monika Aring 617-969-7100	Education Development Center 55 Chapel Street Newton, MA 02160
Chemical Process	Kenneth Chapman 202-872-8734	American Chemical Society 1155 16th Street, NW Washington, DC 20036
Computer Aided Drafting and Design	John Morrison/ Jane Beardsworth 202-637-3426	FIM 1331 Pennsylvania Avenue, NW Ste. 1410, North Tower Washington, DC 20004-1703
Electrical Construction	Charles Kelly 301-657-3110	National Electrical Contractors 3 Bethesda Metro Center, Ste. 1100 Bethesda, MD 20814-5372
Electronics	Irwin Kaplan 202-955-5817	Electronics Industries Foundation 919 18th Street, NW Washington, DC 20006
Electronics (DOL)	Cheryl Fields Tyler 408-987-4267	American Electronics Association 5201 Great American Pkwy Santa Clara, CA 95054
Grocery	Jim Williams 703-437-5300	Grocers Research and Education Foundation 1825 Samuel Morse Drive Reston, VA 22090
Hazardous Materials Management	Jim Johnson 817-772-8756	Center for Occupational R&D (CORD) 601 Lake Air Drive Waco, TX 76710
Health Care	Sri Ananda 415-241-2725	Far West Lab for Educational R&D 730 Harrison Street San Francisco, CA 94107-1242
Heavy Highway/Utility Construction and Environmental Remediation and Demolition	John Tippie/ James Warren 203-974-0800	Laborers-AGC Education & Training Fund 37 Deerfield Rd, Box 37 Pomfret Center, CT 06259
Hospitality and Tourism	Doug Adair Sally Conway 202-	Council on Hotel, Restaurant and Institutional Education 1200 17th Street, NW Washington, DC 20036-3097
Human Services	Virginia Mulkern Marianne Taylor 617-876-0426	Human Services Research Institute 2336 Massachusetts Avenue Cambridge, MA 02140
Industrial Laundry	Geoffrey Northey 202-296-6744	Uniform and Textile Service Assoc. 1730 M Street, NW, Ste. 610 Washington, DC 20036
Metal Working	William Ruxton 301-248-6200	National Tool & Machining Assoc. 9300 Livingston Road Ft. Washington, MD 20744
Photonics	Darrell Hull 817-772-8756	Center for Occupational R&D (CORD) 601 Lake Air Drive Waco, TX 76710
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Retail Trade	Robert Hall 202-783-7971	National Retail Federation 325 7th Street, NW, Ste. 1000 Washington, DC 20000
Welding	Nelson Wall Charles Fassinger 305-443-9353	American Welding Society 550 NW LeJeune Road Miami, FL 33126

Pregnant & Parenting Teens

Legislation for Equity

In March of 1994, Congress enacted "Goals 2000: Educate America Act," establishing eight national education goals with the purpose of improving the quality of public education for all young people. The goals address school readiness, school completion, student performance, teacher education, math and science achievement, literacy, safe schools and parental involvement. The legislation seeks to assist state and local education officials to implement an education-reform strategy consistent with the goals set forth in the Act.

To attain these goals, it is of great importance that state education officials address the particular educational, health and social service needs of students with extra challenges, including pregnant and parenting adolescents. The goals set forth in Goals 2000 will not be reachable unless educators make a concerted effort to provide better educational programs and opportunities to enable pregnant and parenting students to achieve successful academic outcomes. In addition, in order for Goals 2000 to achieve its objectives, new efforts must be made to ensure that schools' treatment of pregnant and parenting teens complies with the nondiscrimination provisions of Title IX of the Education Amendments of 1972, a federal law that applies to all schools receiving federal funds.

In addition to Goals 2000, two other pieces of legislation in the Clinton Administration's education reform package, the School-to-Work Opportunities Act of 1994 and the reauthorization of the Elementary and Secondary Education Act of 1965, of which the Women's Educational Equity Act (WEEA) is a part, reinforce the reform agenda of Goals 2000 and provide further support for improving the educational opportunities available to pregnant and parenting teens. The programs authorized by these Acts may provide additional sources of funds for the strategies advocated herein to improve the educational outcomes of pregnant and parenting teenagers and their children.

An Increase in Parenting Teens

Pregnant and parenting teenagers account for a sizeable and growing proportion of the population served by public schools. Twelve percent of all women aged 15 to 19 become pregnant each year. Perhaps even more dramatic, one-quarter of all young women will become pregnant before their eighteenth birthday. Increasingly, pregnant teenagers are becoming teenage mothers. Slightly more than half of all teen pregnancies result in childbirth, and the proportion of pregnant teenagers who give birth to a child has increased in recent years.

Public schools that serve a high proportion of low-income and minority students are especially likely to have significant numbers of pregnant and parenting students. Adolescents from low-income families, who are already more likely to be educationally disadvantaged, are more likely to become pregnant than their peers from middle- and upper-income families, and teen mothers are significantly more likely to be from a disadvantaged socioeconomic background than their nonchildbearing peers. Teen parenting also disproportionately impacts on young women of color. The birthrate for black women aged 15–19 is 19 percent, compared to 13 percent for Hispanic teens and 8 percent for white teens. In recent years, the teen birthrate has risen most significantly for Hispanic teens.

Who Are Pregnant and Parenting Teens?

Although the term *pregnant and parenting teens* is uniformly used throughout this text, in fact, pregnant and parenting teens comprise a diverse population in and of themselves. Teen pregnancy and parenthood occur among young women of all races, income levels and educational backgrounds. Although black and Hispanic teens are disproportionately likely to become teen mothers, two-thirds of all teen births are to white teens. In addition, while teen mothers from poor and low-income families represent the vast majority of all teen mothers, teens from higher income families also become pregnant or parents.

Teen mothers vastly outnumber teen fathers and represent a much greater proportion of the school-age population. On average, teen mothers are three years younger than their partners. According to one estimate, nearly half of all babies born to teen mothers were fathered by men aged 20

Adapted with permission from *GOALS 2000 and Pregnant and Parenting Teens: Making Education Reform Attainable for Everyone*, by Deborah Brake at The National Women's Law Center, in collaboration with The Council of Chief State School Officers and The National Association of State Boards of Education, March 1995.

or older. However, despite their fewer numbers, teen fathers also face educational disadvantages, and the policies advocated herein would benefit teen fathers as well as teen mothers. Programs targeting pregnant and parenting teens should ensure that their services are accessible to teen fathers as well as teen mothers.

Pregnant and parenting students face significant barriers to academic achievement, largely because traditional school environments often conflict with the competing demands of pregnancy and child rearing. Moreover, the children of teen parents are themselves at high risk for educational failure, as their prospects for academic success are directly correlated with the educational attainment of their mothers.

Title IX and STW

Too many schools continue to discriminate against pregnant students and student mothers, depriving them of their rights under federal law. Even the most subtle forms of discrimination against pregnant and parenting students may be enough to drive these students from the classroom.

- The implementation of School-to-Work must include assurances that school districts are in compliance with Title IX of the Education Amendments of 1972.
- Schools may not exclude pregnant students from regular school programs and activities.
- Separate programs for pregnant students must be completely voluntary.
- The instructional part of separate programs for pregnant students must be comparable to that offered in regular school programs.
- Schools must treat pregnant students within school programs in a nondiscriminatory manner, including by accommodating students with pregnancy-related conditions to the same extent as students with other temporary disabilities.
- Schools may not discriminate against teen mothers, either in policy or in practice.

Strategies for Success

Efforts to make school environments more responsive to pregnant and parenting students, and to provide such students with the services they need to obtain a quality education, reinforce and are consistent with schools' obligations to pregnant students and teen mothers under Title IX.

Successful program components include the following:

- Child care
- Flexibility in school scheduling
- Counseling
- Coordination with community service providers
- Data collection
- Instruction in prenatal health and parenting
- Family planning services
- School-based or school-linked health centers
- Outreach to pregnant and parenting dropouts
- Creative learning strategies and supplemental educational and vocational services
- Teacher education programs designed to eliminate teacher bias
- Parental involvement

Successful program models combine a number of the above components to comprehensively address the needs of pregnant and parenting teens, and have resulted in increased school retention rates, decreased repeat pregnancy rates and improvement in school readiness for the children of program participants.

Efforts to address the needs of pregnant and parenting students through special programs are only a partial solution. Regular school environments must still provide the services and accommodations necessary to retain and educate pregnant and parenting students. ◆

School-Based Learning

Dick and Jane Decide

When people choose to pursue careers for which they are suited but which are also considered nontraditional (i.e., are normally held by members of the other gender), there are a great many societal pressures they have to face. Some people may change their minds about continuing with a nontraditional career because the pressures are too great.

Description of Activity

Over two days students will analyze the nontraditional career decisions made by a male and a female, in order to determine what special or extra obstacles each encountered because of choosing a nontraditional career.

Overall Goal

Students will begin to recognize the personal obstacles that people often face when making nontraditional career choices and will describe the societal expectations and values that cause those obstacles.

Materials Needed

Chalkboard and chalk; copies of "Dick's Decision" and "Jane's Decision" (stories follow).

Instructions for Conducting the Activity

Conduct this activity over two days.

First Day

Divide the class into two groups, asking each group to select a leader who will record and report on the group members' findings. Then distribute copies of "Jane's Decision" to one group and copies of "Dick's Decision" to the other. Give the groups time to read the stories.

Now instruct each group to brainstorm and make two lists, as follows, and to be prepared to report its findings during the next class period.

1. The obstacles encountered by the character in the course of making a nontraditional career choice.
2. The reasons the character encountered those obstacles.

Second Day

Ask the leader of the first group to give a brief description of the character's story and then to report on what the group felt were the obstacles and the reasons for them. As the group leader reports, write the character's name on the chalkboard and list the obstacles and reasons as they are presented. Then repeat the process, with the leader of the second group reporting.

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias,* by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 59–63.

After both reports have been presented and the results posted on the board, ask the class to compare lists for similarities and differences, that is, what kinds of problems Dick and Jane both faced and what kinds of problems only one or the other faced; and to analyze in what way gender-role expectations were a factor. You may also use any of the following questions as guides.

1. How do you feel about the reality of either character's decisions? Why do you feel that way?
2. What seem to be the major factors that influenced Dick's decision? That influenced Jane's decision?
3. Do you think either character might be influenced to change her or his mind? If so, how do you feel about that?
4. How would you finish the characters' stories?

Outcome Objectives

Short-term behavioral objectives

- Students will list and describe obstacles often faced by people who make nontraditional career choices.
- Students will list and describe the role expectations and values of society that cause the obstacles.

Long-term attitudinal objective

- Students will understand that making nontraditional career decisions may require more determination on their part than electing to remain in a more traditional career.

Suggestions for Follow-Up/Variations

1. Hand out just one of the stories, and when the students have read it, organize a debate on one of these topics:
   a. It is more difficult to choose a nontraditional career than to work in a traditional occupation.
   b. It is more difficult for a female to make a nontraditional career decision than for a male.
   c. It is easier today than it was ten years ago for anyone to make a nontraditional career decision.

When the students have finished the debate, hand out the other story, allow them time to read it, and either hold another debate or ask them how their opinions have changed (if at all) now that they have read the second story.

2. Have the students role play endings to the stories of Jane and Dick.

Dick and Jane Decide

Dick's Decision

You, Dick, are a 20-year-old male beginning your third year of college. You come from a home that has been strongly dominated by your father, who is a highly paid certified public accountant (CPA). Your mother has not worked outside the home but is very active in civic affairs. You have an older sister and a younger brother. Your sister has completed college; however, she recently married a doctor and therefore does not intend to work outside the home because her husband's income is sufficient to support the two of them. Your parents are not in the least upset by your sister's decision not to "use" her degree.

Until this year, you have been majoring in business—at your father's urging—and have had vague plans about becoming a CPA. However, you have long known that what you really want is to go into show business. You are a member of the college drama and dance groups, and have received encouragement from several professionals who have seen you perform at concerts. After two years, you have finally decided to change your major to theater and have just informed your parents of your decision. To put it mildly, none of your family is taking it well.

Your father objects because, he points out, very few performers make good money, show business is a financially risky profession, and it is hardly a secure vocation. Your mother, going a step further, is questioning your masculinity. Your sister and your brother both think you are crazy to give up a career as a CPA to go into show business.

Although you are determined to stick to your decision to go into show business, you are very disturbed by the emotional upheaval your decision is causing in your family from whom, at this point, you are more or less estranged. ◆

Jane's Decision

You, Jane, are about to graduate from high school at the head of your class. Both of your parents are doctors; your father is a surgeon and your mother is a pediatrician. Although you know that you have the intelligence to succeed in college, you really don't want to go to school any longer. However, having been raised by a well-to-do family, you also know that having money to do the things you like is important to you.

Several weeks ago a recruiter from a public utility company visited your high school and explained about the company's training program for computer technicians. When you told the recruiter of your interest in the program, the recruiter was very excited, saying that you could have a fine future with the company because you are female, and that the company is especially interested in recruiting females for their technical positions.

You know that if you apply for the training position, you will be guaranteed a salary while training; that when you finish, you will be earning a wage that is among the highest in the country; that if you decide to move to management, you will have every opportunity to advance because of your gender; and that if you get bored by your position, you can train for the position of systems analyst, an idea that really excites you. Therefore, you announce to family and friends that you are not going to college but instead are applying for the utility company's training program. Everyone is horrified by your decision.

- Your parents do not want you in a blue-collar position and point out that you are also doing a disservice to humanity by not using your intellectual ability to become a doctor.
- Your boyfriend is jealous and wonders why you've chosen a job that will put you together with so many men.
- Your best girl friend, who was planning to room with you in college, thinks you're crazy and, more especially, "boy crazy."
- Your high school counselor, who helped you get accepted by a university, cannot understand why you would "double-cross" the counselor and not at least give college a try.

You are amazed at these reactions, as you simply believed your job choice to be a good business decision that would allow you to earn a high salary, let you advance rapidly, and give you the time and money to do the things you like. ◆

School-Based Learning
"My Dad's a Secretary"

When people choose to pursue careers for which they are suited but which are also considered nontraditional (i.e., are normally held by members of the other gender), there are a great many societal pressures they have to face. Some people may change their minds about continuing with a nontraditional career because the pressures are too great.

Description of Activity

This activity is a role play in which students are asked to consider the pressures faced by one person in a nontraditional career.

Overall Goal

Students will become aware of the fact that it is more difficult to pursue a nontraditional than a traditional career because of societal pressures.

Materials Needed

Copies of "My Dad's a Secretary: The Story of Aaron" (role play follows).

Instructions for Conducting the Activity

Hand out copies of "My Dad's a Secretary" and allow students three to five minutes to read it. Then divide the class into appropriate groups.* Assign each group one of the following situations to role play before the class.

1. Aaron signs up for business typing instead of personal-use typing, which his college-bound buddies have elected.
2. Aaron enrolls in other secretarial classes in which he is the only male.
3. Aaron is called in for an office conference by his high school guidance counselor, who wants to know why his projected schedule of classes shows secretarial courses.
4. Aaron attempts to explain his decision to family and friends.
5. Upon graduation, Aaron enrolls in a local business college.
6. While he is in business college, Aaron falls in love with a young woman and has to explain his career plans to her.
7. Once married, Aaron has to face humiliating work interviews during which he is forced to admit that, among other things, his wife makes more money than he.
8. A firm hires Aaron not because of his qualifications, but because he is in a nontraditional work situation. The firm can now say, "We have a male secretary."
9. People at the firm hesitate to give work to Aaron—they tend to ask the women first and to regard Aaron as a last resort or a joke.
10. When Aaron and his wife have a child, the child has to bear the burden of explaining, "My Dad's a secretary."

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias*, by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 47–50.

- The number of students in each group can vary. For example, in Group 1 role players may consist of Aaron and two or more friends who ask him why he has made his choice. Group 2 can simulate a scene of a classroom filled with ten females, Aaron, and the instructor and bring out the kind of dialogue that might occur.

Outcome Objectives

Short-term behavioral objective

- The student will be able (a) to list, to the satisfaction of the instructor, multiple examples of pressures individuals face when they make a nontraditional career decision and (b) to identify by name the societal groups from which these pressures emanate (family, friends, schoolmates, teachers).

Long-term attitudinal objective

- When faced with career decisions, the student will recognize the obstacles he or she will have to overcome in selecting a nontraditional career.

Suggestions for Follow-Up/Variations

1. Read each situation aloud to the students and have them speculate as a group about the events regarding each situation. Then choose one of the following role-play strategies:
   a. Have one group of students role play all the situations, and then have the remaining class members react to the group's interpretations.
   b. Divide the class into two groups. Have the first group role play the situation one way and the second group role play that situation the opposite way. Then have the class as a whole discuss which version seemed more likely or believable.
2. As an alternative to using role playing for this activity, you could conduct a group discussion. Read each situation aloud to the class and then call upon students to initiate a discussion. Continue the activity according to the objectives described under Outcome Objectives above.

My Dad's a Secretary: The Story of Aaron

Let's suppose that you are a male named Aaron, approximately 15 years old, who has had the opportunity to participate in a high school career education program in which you have observed firsthand several types of jobs. Based on your observations, your finger dexterity, and your knowledge of grammar and spelling (English has always been one of your best subjects), you have decided that you would really like to become a secretary. You feel that this is a sound career decision because it involves activities at which you are good and which you like; further, you have heard that since male secretaries are somewhat rare and scarce, there are great opportunities awaiting you. (After all, several of the president's secretaries are male.) ✦

Work-Based Learning

Mentoring — Why It Is Important

To teach about a job.

A mentor shows not just cognitive understanding but a firsthand, concrete experience of the skills, tools, tasks, timelines, and pressures involved. The realities of a job often differ from the ideal perception of the job.

To serve as a vehicle for self-discovery and for developing personal skills and habits.

Having a mentor can increase the self-esteem and confidence of students and help them to expand their horizons.

To give support, encouragement, and advocacy.

Women of color especially face the added stresses of challenging ethnic or racial as well as gender traditions. In addition, they may run into strong family or peer-group resistance to their career plans and goals. Support and encouragement are crucial in overcoming these pressures.

To provide access and advancement in underrepresented occupational areas.

Mentors are most important at early career stages when much depends on the student having the motivation to persist while preparing for and starting in an occupation. A mentor can combat the isolation and fragmentation experienced by women in underrepresented occupations by strengthening the bonds of friendship and networking.

To foster economic and financial independence.

Having a mentor is especially important for single employed mothers. Since women of color are becoming a larger and larger percentage of those single mothers, mentors can offer significant encouragement for women of color to aspire to and achieve higher-paying jobs and professional growth.

Excerpted from *Hand in Hand: Ideabook for Mentors,* by Bonnie Faddis, Patricia Ruzicka, Barbara Berard, and Nancy Huppertz, Center for Sex Equity (Newton, Mass.: WEEA Publishing Center/EDC, 1988), pp. 7–12

Work-Based Learning
Mentoring — Why It Is Important

Tips for Being an Effective Mentor

The tips below are commonsense items you can keep in mind as you meet with students. They will help make the time you spend with a student more enjoyable for both of you.

Organization Related

- Let your coworkers know in advance when a student will be there so they can help the student feel at ease.
- Introduce the student to as many of your colleagues as possible.
- Explain employee standards to the student.

Job Related

- Include the student in daily events as appropriate (sitting in on meetings, making delivery runs, etc.).
- Try to explain tasks—as well as the criteria used to judge how well a task is done—clearly and concisely.
- Explain and discuss performance criteria in general. To give a specific example, you might wish to explain how someone in your position is evaluated for promotion.
- Give students hands-on experience with the tools and processes you use in your work.
- Give clear instructions and explanations. When giving a direction, stay with it until you know the student understands what is expected.
- Be alert to the nonverbal clues a student gives (uneasiness, evasiveness, loss of interest, etc.). Such clues usually mean that something needs clarifying.
- Give students chances to talk about themselves. The better you know them as individuals, the better you'll be able to work with them.
- Help students relate what they're learning to their own needs and interests. If you see that something doesn't make sense to students, talk about it.
- Try to build an atmosphere that promotes acceptance and an exchange of ideas.
- Be a good listener. Give your attention; paraphrase what you hear.
- Give specific feedback on students' ideas and behavior.
- Answer questions directly. If you come to a difficult question, be tactful, but don't dodge it or beat around the bush.
- Try to be consistent. Predictability is a stabilizing factor in a new environment.

Other

- Above all, be yourself.
- Try to end sessions with your student on a positive note.
- Realize that there are no failures in a mentorship. Both you and your student will learn as much from mistakes as from successes.

Work-Based Learning

Everyday Episodes

Gender-role stereotyping is so pervasive in society that incidents of it occur daily and usually pass unnoticed. One example of this can be found in our daily conversations and routines.

Description of Activity

Students will be introduced to the definition of the phrase *gender-role stereotyping* and will then learn to discern the subtle, implied messages about gender-role differentiations that are present in everyday conversation and activities.

Overall Goal

Students will become aware of the presence of gender-role-biased perceptions, both subtle and not so subtle, and of the extent to which they pervade our society.

Materials Needed

Chalkboard and chalk; "Everyday Sayings" (list of sayings follows).

Activity

Ask the students if anyone among them can define the phrase *gender-role stereotyping* and give an example of what it means. If you receive definitions, work with them until you can get a class consensus close to the definition that follows. If you cannot find someone to define the phrase, use the following definition:

Gender-role stereotyping refers to the unfair generalizations (judgments) that are made on the basis of gender alone.

When you have written the definition of gender-role stereotyping on the board, explain to the class that you are going to read examples of everyday occurrences and common sayings that are gender-role stereotyped. Then read examples from the column of "Everyday Sayings" entitled Phrase or Episode. Ask the class members to analyze what explicit or implicit message makes the phrase or episode gender-role stereotyped. If the class cannot determine the answer, read the answer from the Analysis column to the students. At first, you may have some difficulty eliciting the correct analyses, but after a while all class members should begin thinking about and analyzing the statements.

Outcome Objectives

Short-term behavior objective

Students will be able to list or state specific examples of gender-role stereotyped incidents or expressions and explain, to the satisfaction of the instructor, the bias implied.

Long-term attitudinal objective

When students hear or witness examples of gender-biased behaviors and statements, they will (ideally) recognize the bias and point out the implications for the individuals involved.

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias,* by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 7–10

Suggestion for Follow-Up/Variations

Have the students construct their own list of gender-role stereotyped behaviors and their implications. To do this, students can observe a specific situation (a pep rally, a television show, a movie) and list the gender-role behaviors and their stereotypic implications.

Everyday Sayings

Phrase or Episode

1. "You're really smart for a girl."
2. "Big boys don't cry."
3. "You're really strong for a girl."
4. To a little boy: "You're acting just like a little girl."
5. "She makes good money for a woman."
6. "Typical woman driver."
7. "You've come a long way, baby."
8. "You're the man—decide."

Analysis

1. Implies that intelligence is linked to gender and that girls are intellectually inferior.
2. Implies that crying is not a masculine act and that girls (both little and grown-up) and *little* boys are the only ones who are allowed to express emotion.
3. Implies that strength is gender linked (and at times, biologically, it may be); further implies that all girls (women) generally are weak.
4. Implies to a small boy that "acting like a girl" is wrong and not the masculine thing to do.
5. Implies that it is very unusual for a woman to receive a high salary or a salary equal to a man's; further implies that as a woman, she shouldn't be earning a substantial salary or that she is not competent enough to do so.
6. Implies that only men are competent or good drivers and that women generally are the ones who make driving mistakes.
7. Although women have made headway toward obtaining equal rights, the use of the term *baby* implies a certain dependency associated with young children; it also implies that men have somehow *allowed* women to seek new roles.
8. Implies that decisions are to be made only by men, that men are responsible for the decision-making process and that women are not good decision makers.

Work-Based Learning

Being Male: Responsibility or Privilege?

Male roles are influenced by male stereotypes.

Description of Activity

Students will examine some of the traditional behaviors and expectations of males.

Overall Goal

Students will become acquainted with the concept that there are male gender-role stereotypes.

Materials Needed

Copies of "Free to Choose?" (task sheet follows); poster or overhead transparency equipment; chalkboard and chalk.

Instructions for Conducting the Activity

1. Distribute the "Free to Choose?" task sheet and point out to students that it lists 20 activities. Instruct students to read each activity and to indicate their own feelings about males being involved in the activities by circling the response closest to their own position.
2. When the group is finished, ask for a show of hands. Ask, "How many have 12 or more responses under *Agree somewhat?*" "How many have 15 or more responses under *Disagree somewhat?*" "How many have 15 or more responses under *Strongly disagree?*"
3. Now guide a discussion focusing on these questions:
    a. Are males free to choose any activity? What do our answers tell us about how free males really are?
    b. Are males as limited as females in what they are encouraged to do?
    c. What activities seem to be the most acceptable behaviors for males? Why?
    d. What activities seem to be the least acceptable behaviors for males? Why?
4. In order to help the students examine what the world at large says about appropriate male behaviors and cultural expectations, put the following quotes on a series of overhead transparencies or list them on a poster that is temporarily shielded from view:
    a. "It's a man's world."
    b. "Nice guys finish last."
    c. "Act like a man."
    d. "It's a dog-eat-dog world."
    e. "Only the strong survive."

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias* by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 33–38

f. "Every man for himself."

g. "Are you a man or a mouse?"

Reveal the quotes one by one, asking the students what the quotes say about proper male behavior and cultural expectations. When all the quotes have been revealed and discussed, encourage the class to come up with additional quotes.

To facilitate the discussion, divide the chalkboard into two sections. Write at the top of the first section "What Males Seek," and encourage students to think of words that indicate what males seek according to these quotes. You (or a student) should record the students' responses under this first section. Then write at the top of the second section "What Males Resist," and, again, have the students brainstorm words that illustrate what the quotes suggest males resist. These words should also be recorded on the board.

5. Conclude this part of the activity with a discussion centering on these questions:

   a. To what extent are males free in their choices of behavior and cultural expectations?

   b. According to a conventional point of view, what careers would be considered somewhat unacceptable for males? What roles might be considered unacceptable?

   c. What kind of support is available for males who want to break away from traditional careers and/or roles?

6. Finally, instruct students to do the following exercise. Firsts ask students to form groups composed of males only and of females only, six to eight students in each group. Direct the groups to sit in circles, each group of males forming an inner circle and each group of females forming an outer circle that surrounds a group of males.

Next, choose one of the following topics for the males to discuss in their groups:

a. What they like about being male

b. What they don't like about being male

c. What they like about females

d. What they don't like about females

Instruct the females that each is to observe the verbal and nonverbal communication of one of the males during the ensuing discussion. Emphasize that the choice of which male to observe should be made silently, and that no female is allowed to speak while the males are talking. Have the males then begin their discussion.

When the males are through, ask each female to describe the verbal and nonverbal communication she observed on the part of a male. Emphasize that the males are not allowed to speak while the females are discussing them.

Now, reverse positions, having the females sit in the inner circles and the males in the outer circles. Instruct students to repeat the exercise, reversing their roles. Conclude the exercise with a general discussion of how students felt and what their reactions and concerns were in each role.

Work-Based Learning

Being Male: Responsibility or Privilege?

Outcome Objectives

- Students will be able to identify from a list of activities those items which are stereotypic male behaviors.
- Students will be able to satisfy the teacher with examples of male stereotypic clichés.
- In time, students will be able to identify examples of male gender-role stereotyping in any given situation.
- Students will ultimately be able to discuss, orally and in writing, how male roles are limited by stereotypes.
- Eventually, students will become more sensitive to gender-role stereotyping. Some of the males will exhibit behaviors that are less stereotyped, and some of the females will exhibit behavior that is more understanding of male roles.

Suggestions for Follow-Up/Variations

1. Have students keep a daily list of ways males benefit from being male. Have them include the negative as well as the positive aspects of being male. Discuss the lists the following week and periodically thereafter.
2. The students might also collect verbal expressions, clichés, or sayings that illustrate traditional views of men. The final list could be used to prepare a skit.
3. Have students collect and discuss how magazine and television ads promote the macho male image.

Free to Choose?

Instructions: Circle the response closest to your own feelings about each of the following actions. In your opinion, it is appropriate for a male to:

1. **Cook breakfast.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

2. **Knit a sweater or scarf.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

3. **Sew on a button.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

4. **Wash dishes.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

5. **Do housework.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

6. **Wear a dress in a play.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

7. **Cry.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

8. **Touch and show affection to friends.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

9. **Kiss his father.**

   Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

10. **Baby-sit.**

    Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

11. Back out of a fight.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

12. Carry a purse.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

13. Complain about being hurt or sick.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

14. Wrap a birthday present for his grandmother.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

15. Tell someone he was nervous and afraid about a test, a game, or a date.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

16. Ask a female to pay her own way on a date.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

17. Date a female who is the smartest person in the class.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

18. Announce openly to a group that he doesn't want to be a leader and will willingly let someone else be in charge.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

19. Try out for cheerleader.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

20. Take dancing lessons.

Strongly agree / Agree somewhat / Disagree somewhat / Strongly disagree

At Home, in School, and in the Workplace

What Is Gender-Based Violence?

Gender-based violence is fueled by deeply held beliefs that define females and males in rigid, limiting ways. It is violence that is culturally supported by the belief that men should be dominant and have power and control and that women should remain passive and submissive. Society dictates these unconscious, but fairly rigid role definitions of what is appropriately female or male, and most of us accept them, at least to some degree, as "right." When girls or boys, women or men are seen as stepping outside of those definitions—as are gays and lesbians—they can be easy targets for gender-based violence, especially because it seems that the violence is condoned by society.

Gender-based violence includes sexual harassment in the workplace and schools, dating violence, rape, battering and abuse, male-on-male violence, violence in the home, homophobic violence, and violence within gay and lesbian relationships. It is not only physical violence, but also the often overlooked psychological abuse that includes verbal abuse, manipulation, threats, and economic control.

It is difficult to deal effectively with the complexity of gender-based violence when its different components are addressed individually. Date rape, sexual harassment in the workplace and in schools, stalking, violence in the home, antigay and antilesbian violence, and street hassling have all been discussed as separate issues rather than as different parts of the same problem. By keeping these discussions separate we are missing the common link—the harm that gender-stereotyped messages can do to our children—and we are not addressing the safety issues that significantly affect female students and women in the workplace.

Social and Educational Costs

When sexual harassment is not confronted in the school, it will continue to be a problem in workplaces. Schools and workplaces are facing serious lawsuits stemming from sexual harassment and safety concerns. The educational and social costs are enormous.

A Diminished Home, School, and Work Environment

Girls and women facing violence in the home, school, or workplace cannot actively participate. In school, they are denied their education, and in the workplace they are preoccupied with avoiding the abuser. An environment filled with intimidation, fear, or health/safety factors is an obstacle to concentration and learning. Girls and women who are harassed have a difficult time concentrating on school work or work-related activities and will instead be preoccupied with feelings of anger, hurt, and fear. They can simply "tune out" in class or work and not talk as often, or engage as much in activities or conversations with their peers.

From *Gender Stereotypes: The Links to Violence*. Newton, Mass.: WEEA Publishing Center/EDC, 1995.

Increased Isolation

Girls and women who are being harassed or who are experiencing dating violence will put a great deal of energy into avoiding their harasser. They may skip school or work, feign illness, or truly become ill or depressed to the point where they are listless and unable to participate in classes or work-related activities. When women do not feel safe enough to report the abuse to school or work officials or family members, they never learn what it feels like to ask for respect or acknowledge for themselves and others that they deserve it. Nor do they learn how to take action to protect themselves. Without these skills, and without a clear sense of their own self-worth, they may begin a debilitating lifelong pattern of hiding their feelings.

Loss of Self-Esteem

Victims often blame themselves for the abuse and feel embarrassed, humiliated, and unsure of themselves. These feelings, if left unresolved, can result in their being more vulnerable to abuse in the future.

Vulnerability at Work and at Home

If students leave school still believing the messages that tell them violence and aggression toward women, and gays and lesbians are okay, they will enter the workplace unprepared to cope with everyday situations. The rising demand to reduce sexual harassment in the workplace reflects the need to train our young men and women to interact in peaceful ways or to deal with conflict in a mutually respectful way. ◆

A Sea of Negative Expectations

Females with disabilities face a double set of barriers in our society, based on disability *and* gender. They fare worse than either men with disabilities or women who are not disabled on all measures of educational, vocational, financial, and social success. For example, women with disabilities achieve lower educational levels, are less likely to be employed, and are less likely to find partners. Young women with disabilities are thus in particular need of a broad range of community services to help prepare them for these barriers.

Description of Activity

This exercise will help you first examine how gender and disability stereotypes limit career choices, and then help you develop strategies to expand your options.

Overall Goal

The goal of this exercise is to communicate a sense of the discouraging, limiting environment in which many young women with disabilities grow up.

Materials Needed

In advance, reproduce the comments on the next page and cut along dotted lines. Hand out a slip of paper (perhaps attached to index cards) to each participant. Go around the group until all slips are distributed.

Instructions for Conducting the Activity

Tell participants: These cards are examples of typical comments heard by young women with disabilities. Let's read them out loud, one at a time.

From *Barrier Free: Serving Young Women with Disabilities*, by L. Marks and H. Rousso, YWCA of the City of New York (Newton, Mass.: WEEA Publishing Center/EDC, 1991), pp. 21–26.

Photocopy and cut along dotted lines:

High school guidance counselor: "You'll never make it through medical school sitting in a wheelchair. Let's consider another field for you."

Mother: "I think my daughter should become a research librarian so that she won't be so much in the public eye."

Office of Rehabilitation counselor: "You can't become a beautician. You can't stand on your feet long enough and beauticians can't work sitting down. No one will hire you."

Father: "It's really not safe for you to be using public transportation. You should stay home where mother and I can keep an eye on you."

Peer, who also has a disability: "What's the point of our looking for a job? It will cost our whole salary to get to work, and we'll wind up losing our medical benefits."

Mother: "I can take care of you better than anyone else. I've been doing it since the day you were born. If you get a job, you'll have to depend on strangers to help you. Is that really what you want?"

Cousin: "Just get those fancy ideas out of your head, girl. Nobody's going to hire a Black in this town to announce the news. And you can't even walk. Forget it!"

Disabled young woman: "Even though I'm very good in math and accounting, I think I want to be a secretary. My aunt's a secretary and she's really sexy and has lots of dates."

Father: "If you get a job, you'll lose your benefits, and we need those benefits to help pay the rent. Don't you care about us?"

Neighbor: "Why don't you become a teacher of handicapped children? If I were you, I'd feel more comfortable working with my own kind."

Mother: "It's God's will that I take care of you until the day I die. Why do you need a job?"

Aunt: "It's really important for you to study hard in school and get a good job because, let's face it, honey, you're not too likely to find a husband to take care of you."

Discussion Questions

1. What are your reactions to these comments?
2. What messages do you think young women with disabilities are being given about careers and their future?
3. How do these messages compare with the messages sent to women who are not disabled?

Discussion Guidelines

1. These negative expectations are not the only barriers girls with disabilities face as they consider entering the workplace. They also confront inaccessible transportation and buildings, the possible loss of disability-related benefits, and discriminatory practices by employers.
2. Not surprisingly, only a small percentage of women with disabilities work, and those who do tend to earn low incomes.

- 13.1 percent of women with disabilities work full time, compared to 23.4 percent of men with disabilities. (1988)
- Following are average annual incomes in 1987 for specific groups of workers (includes full- and part-time employment):

  female workers with disabilities—$8,075

  all women—$13,000

  male workers with disabilities— $15,497

  all men— $24,095

- Women of color who have disabilities have lower income and employment levels. As an example, for every dollar earned by a white man without a disability, a Black woman with a disability earns 22 cents.*

Debate: Could She Become an Electrician?

Overall Goal

The goal of this exercise is to expand the participants' ability to help young women with disabilities explore career interests and options.

Materials Needed

Read the case example of Kathy (below).

Instructions for Conducting the Activity

Divide participants into two groups: one will argue in favor of Kathy becoming an electrician, the other will argue against this choice. Give the groups 10 minutes to prepare their position. Let the debate develop for 10–15 minutes; then lead a discussion about the experience.

Tell participants: We have been talking generally about some of the barriers young women face in making career choices. Now let's consider a specific example. I'll read you a description of Kathy, and then we will debate the pros and cons of her pursuing a career as an electrician.

Kathy's Story

Kathy is an 18-year-old Black woman who has cerebral palsy. Her disability has caused weakness in her legs, so she walks with crutches; she has excellent manual dexterity. A senior in high school, Kathy has maintained a C average. She announces to her teen club leader that she's always wanted to be an electrician, like her uncle. Both her guidance counselor and parents think this is a terrible idea and want her to pursue clerical training. Her uncle agrees, pointing out that racism in the trades had limited his own advancement. Kathy is confused and doesn't know how to proceed. ◆

I'm going to divide you into two groups. One group will argue that she should not become an electrician. The other will argue in support of Kathy pursuing this interest.

You do not need formal knowledge of an electrician's job to develop a point of view. Each group will have 10 minutes to prepare their side. Then we will debate together.

Debate Guidelines

1. Give each side a few minutes to present their point of view, without interruption.
2. Acknowledge that people may be arguing positions they don't personally agree with, but like good lawyers, they should do their best to develop convincing arguments. Help participants get in the spirit of a lively, competitive exchange.

Discussion Questions

1. How did you feel arguing your side's position?
2. How would you advise the teen group leader to respond to Kathy's dilemma?
3. Would you respond differently if Kathy were a man? If she did not have a disability?
4. How do you think the fact that Kathy is Black might influence the advice that she receives or her acceptance in a nontraditional job like this?

Discussion Guidelines

1. Point out that you don't need to know a lot about being an electrician or about cerebral palsy to be helpful to a young person like Kathy. The essential ingredients are openness, curiosity, and willingness to explore possibilities.
2. Women with a wide range of disabilities have careers in many different fields. Some examples include the following:
   - a stockbroker who is blind
   - a sculptor who is quadriplegic
   - a neurochemist who is deaf
   - a newspaper reporter who walks on crutches
   - a teacher who uses a wheelchair
3. These women have used a range of adaptations and special devices at the workplace to accommodate to their physical limitations. Beware of assumptions: the authors learned from a training session participant that her husband was able to work successfully as an electrician with color-coded wires despite being color blind.
4. Most women with disabilities who work have faced discrimination. They have developed activist strategies to overcome it, from educating their supervisors to filing formal complaints.
5. You may want to contact disability advocacy organizations in your community and state.

• The statistics cited in the first two bulleted items come from *The New York Times*, August 16, 1989. The figures for the third bulleted item appear in "Introduction: Beyond Pedestals," in *Women with Disabilities: Essays in Psychology, Culture and Politics*, ed. by Michelle Fine and Adrienne Asch (Philadelphia: Temple University Press, 1988).

Connecting Activities

TV — A Mirror of Reality

Television programs contribute to gender-role stereotyping.

Description of Activity

Research teams of four to six students each will be assigned one weeknight of TV watching to observe and analyze instances of gender-role stereotyping.

Overall Goal

Students will become aware of how television contributes to the stereotyped roles of men and women.

Materials Needed

Access to a television set at home (several students may gather at one home); for each student, four or five copies of the "TV Scorecard" (scorecard follows); chalkboard and chalk.

Instructions for Conducting the Activity

1. Divide the class into research teams of four to six students each. Assign to each team one weeknight of TV watching.
2. Have each student complete a "TV Scorecard" for each show watched during the assigned night of viewing.
3. On the day designated for reporting and wrapping up, have each team summarize for the rest of the class its findings in terms of physical descriptions, emotional characteristics, personality, and mannerisms for the male and female characters.
4. As each research team reports, use the chalkboard to synthesize the nightly summaries and then discuss them with the students.
5. Ask students to discuss what television says about male and female roles. The following questions may serve as guides:
   a. How many men are shown in a demeaning role? How many women? What determines whether a role is demeaning?
   b. Who are usually the decision makers—men or women?
   c. What are the males' strengths and weaknesses?
   d. What are the females' strengths and weaknesses?
   e. How does television mirror reality in terms of male and female roles? Are most people in the real world like these characters?
6. Finally, ask the students to construct the typical TV male and female characters for a fictitious show.

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias*, by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 13–16.

Connecting Activities
TV—A Mirror of Reality

Outcome Objectives

- Students will be able to list and describe, orally and in writing, characteristics of stereotyped portrayals of males and females in television programs.
- Students will be able to point out to other individuals examples of stereotypic TV characters.
- Students will be able to list, to the satisfaction of the teacher, the reasons why stereotypic TV characters are or are not satisfactory role models for real people.
- Eventually, students will be able to discuss, orally and in writing, how stereotypes of masculinity and femininity restrict the development of personality and may limit their own career plans.

Suggestions for Follow-Up/Variations

1. Have students create a collage or montage of what television (i.e., society) considers to be the ideal woman and/or the ideal man. Included should be physical descriptions, emotional characteristics, personality, and mannerisms.
2. Have students create a collage or montage about the ideal boy and/or the ideal girl in high school.

TV Scorecard

Instructions

As you watch each show, complete one scorecard.

Name of show:

	Male	Female
Characters in show:		
Leading roles:		
Physical descriptions:		
Emotional characteristics:		
Personality:		
Mannerisms:		

Connecting Activities
Help Your Parents Understand

Personal interest in a work situation may sometimes conflict with the values or wishes of one's family. The pressures created may sometimes interfere with an individual's career choice.

Description of Activity

Students will read, analyze, and then determine a solution to the problem of an adolescent who is caught between individual career preferences and family expectations.

Overall Goal

Students will understand that their family's (especially their parents') perceptions of society, status, roles, and work can put pressure on and influence their occupational choice.

Materials Needed

Copies of "How to Help Your Parents Understand" (story follows).

Instructions for Conducting the Activity

Open the activity by reading to students the following fantasy, asking them to imagine the situation.

Almost an Unknown Rock Star

You are just turning 18 and want to be a famous rock and roll singer. When you first tell your parents that you want to sing rock, they object strongly, saying that you will never "make it" and that it's a waste of time and money. However, you have been singing with a local group and have been told that you are very good. After saving your allowance and the money you've earned from odd jobs, you cut a demonstration record. The record is a big hit, and you're on your way!

Ten years have passed. You are now a well-known rock star and have sold millions of records. How do you feel about your parents' objection to your career choice? What would you say to them now?◆

Ask students to think about their responses and what solutions they would offer, as you proceed with the main activity below.

Main Activity

1. Distribute to each student a copy of "How to Help Your Parents Understand," and give the class a few minutes to read the story.
2. Next, divide the class into small groups (you determine the workable number) and instruct the groups to brainstorm solutions to LeRoy's problem with his father. Some questions they might consider are the following:

Excerpted from *Choosing Occupations and Life Roles: Examining Sex Bias* by Karen Pfiffner, Appalachia Educational Laboratory (Newton, Mass.: WEEA Publishing Center/EDC, 1983), pp. 55–58.

   a. Why does LeRoy's father disagree with his wanting to be a newscaster and why do you think the father feels this way?

   b. If you were LeRoy, how would you help your father try to understand?

   c. What do you think LeRoy will do if his father refuses to pay the tuition?

   d. What would you do?

3. After each group has reached a consensus, ask a member of each to report the groups' findings and solutions. Compare the groups' answers and have the class combine them into either one summary decision or several alternatives to LeRoy's problem.

Outcome Objectives

Short-term behavioral objective

- Students will be able to list or describe, to the satisfaction of the instructor, ways in which family can exert pressure and influence career choice.

Long-term attitudinal objective

- When students make a career decision, they will consciously recognize the part family influence plays in the decision.

Suggestions for Follow-Up/Variations

Have the students role play any or all of the following solutions, and then have them determine which are the most realistic or satisfactory.

1. LeRoy gives up his career goal and joins his father's company. Will he succeed?
2. LeRoy goes to college despite his father's wishes, but to do so he must take out large student loans and get a part-time job that delays his graduation. Does he succeed? What are his feelings about his family?
3. LeRoy gets his father to agree to pay the tuition. How does he do this?

How to Help Your Parents Understand

Hi! My name is LeRoy Adams and I've got a problem that maybe you can help me with. You see, my dad moved here from the South and has some definite feelings about "white folks." He's worked very hard here and built up quite a contracting business. Last year he cleared over $100,000, and Mom and I have everything we need. My dad has been waiting for me to graduate from high school so that I can move into the business. Once I learn it, I can be his partner. He's already designing a letterhead that says 'Adams and Son.' Then, when Dad is ready to retire, I'll take over.

The thing is, I don't want to be a contractor. I'd really like to be a reporter or newscaster. I've done well in speech and English, and I've been accepted by an Ivy League college noted for its journalism courses. Because of my grades, I've won a partial scholarship, so my dad would need to pay only half my tuition, which he can easily do. But he won't help. He says I won't fit into that college, and that even if I do get somewhere as a newscaster, it would just be as a "showpiece." He can't understand why I don't want to help with his company and eventually take over.

How can I help my dad understand that I just wouldn't be good for his company, because it's not what I want to do? And how can I help him understand that I really do want to be a newscaster and think I'd be very good at it? I think a lot of things have changed since my dad set up in business, but I'm not sure how to convince him of any of this. ◆

Disaggregating the Data

Ensure Success for All Students

District-Data Analysis

Step 1: Gathering Quantitative Data

This process guides the district in assembling existing data in order to examine them from the perspective of race, class, and gender to uncover patterns across the grade levels as well as within content and other categorical areas. Following are three assessment instruments that examine student achievement, patterns for grouping students, and staffing patterns for school personnel. The achievement averages instrument should be used to compare math, verbal, or other achievement measures routinely used in your district. If you need a separate sheet for each measurement tool, copy additional pages.

Ethnicity, gender, and socioeconomic status (SES) are integrated within most categories. This may be a new perspective to your district, but is essential to ensuring success for all students. The most widely used indicator of low SES is eligibility for school lunch programs, with individuals eligible for such a program categorized as below the poverty line. By integrating race, class, and gender into each category, districts and individual schools can begin to uncover patterns that may be barriers to the achievement and well-being of all students.

Step 2: Analysis of data

The first step in the analysis of the data is to look for trends or anomalies. With these in mind, the district can begin to ask a series of questions to determine both strengths and weaknesses and to pinpoint areas of focus. This information can be used to answer the following kinds of questions.

Student Achievement

1. What gaps are there in achievement levels between groups? Do these gaps widen or narrow the longer students are in school?

2. Whom does the district reach best? With which students is the district least effective?

3. Who is achieving in what classes? Is there a pattern, for example, do white middle class males have consistently high levels of math achievement? What students do best in what subjects? What students do worst in what subjects?

4. What does this data tell you about expectations of student achievement and success? Are there groups who decline or rise in achievement, groups that stay consistently high or consistently low? What might this indicate about classroom interactions, the curriculum, or the achievement instruments themselves?

5. How do your schools explain student achievement levels? Ask and list explanations. Ask teachers how satisfied they are with students' current achievement. Divide these explanations into three groups: (1) those that focus on the children and their families as the main source of the achievement levels, (2) those that focus on things the schools and teachers are doing, and (3) those that focus on other factors outside the control of the school. An examination of these explanations will give you a good sense of who holds what level of ownership and what issues you may need to address.

6. How does your district compare with the achievement of college-bound students in affluent communities, to the best of your knowledge? As your students move through school, does their achievement level become more like or more different from that of college-bound students from affluent communities?

Groupings

1. What are all the ways in which the district groups students differently on the basis of achievement, ability, and other criteria for different instruction?

2. How much upward mobility is there out of groupings or special classes for low achievers? Are certain groups routinely tracked into specific groups? What proportion of students in remedial programs get out and into regular programs? Are advanced or honors classes exclusionary, serving only a particular group? How does this affect the achievement of other groups?

3. Do achievement levels among these groups or special classes widen as students move up through the grades or do they come closer together? (Compare with the data in Student Achievement.)

4. Do students know why they are in certain groups? How do they feel about this? What is the main thing they are learning in this group? (You may want to ask students from those groups you see as not proportionately representative.)

5. What are district policies regarding grouping patterns? Which respond to state or federal policies?

6. What is the decision-making process when students are assigned to a group? Who is involved? What role do parents play, how much power do they actually have? What information/criteria is used to determine placements? Is there a procedure for a student moving out of a program or group?

7. Does the racial/gender/class composition vary significantly across groups? For instance, are poor African American males consistently overrepresented in discipline? How does this correlate with their average achievements? What is happening in the schools to create this? For instance, how positively is this group portrayed in the curriculum, outside the school, and to what extent does this group receive positive attention in school?

Staffing Patterns

1. What is the race/gender distribution across the district? Are women overrepresented in certain areas and underrepresented in others? Are women of color concentrated in one area? Men of color? Females and males with disabilities? What policies reinforce these patterns? What supports affirmative action?

2. Do white teachers/staff represent the majority of role models students see each day or is there a good representation across race, gender, and disability.

3. Are people of color and people with disabilities well represented in positions of authority or are they concentrated in clerical, support, custodial, or aide positions? Are certain ethnic/racial groups dominant in any one area?

4. Are there differences between elementary, middle or high schools? For instance, are physical education teachers in elementary or middle schools women, while physical education teachers and coaches on the high school level male? Are most math teachers white males?
5. What are the career paths, staff development options available to help groups move through the system ?

6. What might these patterns tell you about student achievement and groupings? Compare with the Student Achievement data.

Step 3: Correlation of Data

Taking what we have learned by asking the kinds of questions posed in the analysis, we can now move to examining the correlations between our findings. Some of the questions, issues we can now raise include the following:

1. What are the issues or patterns in student grouping that lead to achievement patterns? For instance, is there a pattern of ESL/Bilingual grouping that correlates with achievement? How might inequities be addressed? How is the level of actual English proficiency determined and utilized when mainstreaming students? What needs to happen? Who needs to be involved?

2. Is there a grouping pattern related to SES and is that grouping correlated to any patterns of achievement as shown in the data?

3. Do you think grouping patterns and achievement are self-fulfilling and is that reflected in the data? What are the relationships? Are negative or positive expectations reinforced by the policies and practices currently in place? What needs to change to impact this?

4. Based on the data, what seem to be the patterns of interaction among the various students? Do students of the different groups mingle within classes or extracurricular activities? Are the patterns of grouping for special education classes different from those in regular classes? What correlation do you see between these patterns of interaction and achievement? What is the correlation with adult staffing patterns? Do staff and students of various backgrounds interact?

5. Does the data support gender achievement in certain areas and do the grouping patterns and staffing patterns contribute to that? If boys and girls are achieving differently, what are the patterns of grouping and instruction that need to change to create equitable achievement?

6. Do you see a correlation between adult staffing patterns and student achievement? Are certain groups of adults located in fairly stereotypical roles? What are the implications of this for student achievement and expectations? What do you need to do to address this? What staffing patterns should be in place to enhance a movement toward valuing diversity?

7. Based on this data what correlations do you see with the curriculum? With the current policies and practices of the district? What are the staff development implications?

Disaggregating the Data to Ensure Success for All Students

NOTE: - SES and +SES indicate below or above the poverty line, as used to determine free lunches.

Achievement Averages

Elementary Level				*Middle Level*				*Secondary Level*			
Test or measurement used:				Test or measurement used:				Test or measurement used:			
Average for:				Average for:				Average for:			
African American				**African American**				**African American**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
Asian				**Asian**				**Asian**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
Hispanic				**Hispanic**				**Hispanic**			
females		males-		females		males		females		males	
-SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
Native American				**Native American**				**Native American**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
White				**White**				**White**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
ESL/Bilingual				**ESL/Bilingual**				**ESL/Bilingual**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
Pregnant/Parenting Teens				**Pregnant/Parenting Teens**				**Pregnant/Parenting Teens**			
females		males		females		males		females		males	
- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES	- SES	+SES	-SES	+SES
Student with Disabilities				**Students with Disabilities**				**Students with Disabilities**			
females		males		females		males		females		males	
-SES	+SES	-SES	+SES	-SES	+SES	-SES	+SES	-SES	+SES	-SES	+SES

Student Grouping

Check grade level: __Elementary __ Middle __ High

(Percents of total)

Total population for this level: ______________

	African American				Asian				Hispanic				Native American				White			
	Female		Male		Female		Male		Female		Male		Female		Male		Female		Male	
	SES*		SES*		SES*		SES*		SES*		SES*		SES*		SES*		SES*		SES*	
	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above	Low	Above
District as a whole																				
ED classes																				
Basic math																				
Advanced math																				
Science																				
English																				
Social Sciences																				
Vocational Ed.																				
Bilingual/ESL																				
LD classes																				
Pregnant/Parenting																				
Chapter I																				
Honors/AP																				
Exceptional																				
Gifted																				
Extracurricular																				
Sports																				
Academic clubs																				
Other clubs																				
Discipline																				
Detention																				
Suspensions																				
Dropouts																				

Total percents may not equal 100 since some ethnic groups may not be listed here.

*SES/economic status is based on federal lunch guidelines. Low means on or below the poverty line; indicate anything above that in above. If you use another guideline, please indicate: ______________________

If your district has more than one country of origin represented within the larger ethnic categories, please list those here. ______________________

District Staffing Patterns

	African American		*Asian*		*Hispanic*		*Native American*		*White*		*With Disabilities*	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
District Totals												
Central Office Superintendent												
Asst. Superint.												
Administrators												
Professional staff												
Health staff												
Clerical staff												
Custodians												
Bus drivers												
School-sites: Principals												
Asst. Principals												
Guidance												
Health/Nurses												
Phys. Ed. Teachers												
Coaches												
Elem. Teachers												
Teacher aides												
Middle Teachers												
Teacher aides												
Sec. Teachers												
Voc. Ed. Teachers												
Bilingual/ESL Teachers												
Aides												
SPED Teachers												
Aides												
Food staff												
Clerical staff												
Custodial staff												
Security staff												

Gender Equity and School-to-Work Fact Sheet

Women, Education, and Work

The more education a woman has, the greater the likelihood she will seek employment. Women and men with specialized technical training can expect to earn half a million dollars more in their lifetime than someone who is working at a low-skill, minimum-wage job.

- Almost as many women as men drop out of school.
- Median earnings for female high school graduates (with no college) working year round, full time in 1991 were less than those of fully employed men who were high school dropouts—$18,042 and $20,944, respectively.

  Source: U.S. Department of Labor, Women's Bureau. Facts of Working Women, No. 93-2, June 1993.

- Women earn at least half of all bachelor's and master's degrees. Women earned 14 percent of bachelor's, 13 percent of master's, and 9 percent of doctorates in engineering. Women earned 46 percent of bachelor's, 40 percent of master's, and 19 percent of doctorates in mathematics. Women earn 26 percent of degrees in dentistry, 33 percent in medicine, and 41 percent in law.

  Source: U.S. Department of Labor, Women's Bureau. Facts of Working Women, No. 93-2, June 1993.

- Under the existing vocational education system, young women are tracked into dead-end jobs where their wages are only 71 percent of what their male peers make.

  Source: National Women's Law Center, 1994. School-to-Work Fact Sheet.

- Lower-paid, lower-skilled jobs are held by more Hispanics and especially by Hispanic women more than any other ethnic groups.

  Source: McKay, E.G. (1986). Hispanic Demographics: Looking Ahead. Washington, DC: National Council of La Raza.

- Females and people of color continue to be underrepresented in science-related employment. In 1988 females and people of color represented only 33 percent and 2.6 percent, respectively, of all scientists.

  Source: National Science Foundation (1990). Women and Minorities in Science and Engineering (Report No. 90-301).

- Women represent
    - 1.9% construction trades
    - 8% of scientists
    - 8% engineers
    - 19.8% engineering technologies
    - 18.4% architects
    - 19.3% doctors
    - 20% lawyers—but 6% law partners

  Source: Bureau of Labor Statistics, Dept. of Labor; National Center for Education Statistics, U.S. Dept. of Education.

Gender Equity and School-to-Work Fact Sheet

Women Are the Work Force

Women will comprise 47 percent of the labor force by the year 2005. Women of Hispanic origin and Asian and other women will have the fastest growth—both at 80 percent. Black women's labor force growth of 34 percent will also exceed the average for all women.

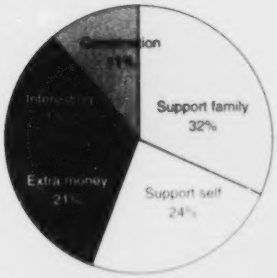
- Of the 54 million employed women in the United States, 75 percent work full time.
- Women are still overrepresented in low-paying jobs, with almost half (44 percent) of employed women working in support jobs. Women earn only 75 cents for every dollar earned by men when comparing 1992 median weekly earnings of full-time workers ($381 for women and $505 for men).
- Women are less likely than men to be self-employed.

Source: U.S. Department of Labor, Women's Bureau, Facts of Working Women, No. 93-2, June 1993.

- Women were 51.3 percent of the U.S. population in 1990 but were 57.7 percent of all persons in poverty.
- Between 1970 and 1990, a startling 99 percent of the increase in the number of families living in poverty was among families headed by women.

Source: 1993 Handbook on Women Workers: Trends and Issues, U.S. Department of Labor, Women's Bureau, p. 27.

Why Women Work



All Working Women

- Fifty-nine percent of wives in married-couple families were labor force participants.

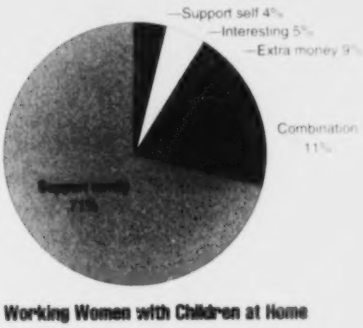
Source: U.S. Department of Labor, Women's Bureau, Facts of Working Women, No. 93-2, June 1993.

- In 1992, 7.1 million families with children under age 18 were maintained by women. Of these families, 64 percent were white, 33 percent were black, and 12 percent were of Hispanic origin.
- Single (never married) women with children under age 18 participated at a rate of 52.5 percent; widowed mothers, 61.4 percent; married mothers with absent spouses, 63.7 percent; and divorced mothers, 80.3 percent.

Source: U.S. Department of Labor, Women's Bureau, Facts of Working Women, No. 93-3, June 1993.

Chart Source: *A staff study prepared by the Joint Economic Committee, Congress of the United States, May 9, 1986.*

Women and Families



Working Women with Children at Home

Women who maintain families, especially those with children under age 18, have more serious socioeconomic problems than other women in the population. Some of these problems include higher unemployment and lower average educational attainment. A higher proportion of families maintained by women have children to rear, as compared with married-couple families. Responsibilities for the care of children, especially of very young children, restrict employment and earning opportunities for many women.

Source: 1993 Handbook on Women Workers: Trends and Issues, U.S. Department of Labor, Women's Bureau.

Chart Source: *A staff study prepared by the Joint Economic Committee, Congress of the United States, May 9, 1986.*

Gender Equity and School-to-Work Fact Sheet

Women and Youth with Disabilities

The proportion of disabled women in the labor force, working or looking for work, rose from 23.5 percent in 1981 to 27.5 percent in 1988, while that of women with no work disability increased from 63.9 percent to 69.5 percent.

- Women with work disabilities are nearly three times as likely as nondisabled women to be unemployed.
- Disabled women workers earned 38 percent less than nondisabled women workers in 1987. This compares to a 30 percent difference in 1980. Disabled women had mean earnings of $8,075 in 1987. Black women with work disabilities had earnings of $6,432 in 1987, while women of Hispanic origin earned $7,559. Men with work disabilities had mean earnings of $15,497.

Source: U.S. Department of Labor, Women's Bureau, Facts of Working Women, No. 92-2, March 1992

- In the educational system today gender-role stereotyping and attitudes about women and girls with disabilities result in fewer educational services, lack of vocational training, and limited access to postsecondary education. Women of color with disabilities face even greater discrimination, and very little is known about the specific needs of women with disabilities who go on to college.

Source: Educational Equity Concepts, Issue Paper Number 1: A Report on Women with Disabilities in Postsecondary Education

- Around 8.6 million young people ages 10 to 17—nearly one-third of the nation's 27.2 million adolescents—have disabilities.

Source: 1988 National Health Survey by the National Center for Health Statistics

The School-to-Work Opportunities Act of 1994 Mandates Gender Equity

Check to see how the following are addressed in your state or local plan:

Section 3. Purposes and Congressional Intent

a. (13) to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability.

Section 4. Definitions

(2) ALL STUDENTS - Both male and female students from a broad range of backgrounds and circumstances, including disadvantaged students, students with diverse racial, ethnic, or cultural backgrounds, American Indians, Alaska Natives, Native Hawaiians, students with disabilities, students with limited-English proficiency, migrant children, school dropouts, and academically talented students.

(4) CAREER GUIDANCE AND COUNSELING

(C) aid students to develop career options with attention to surmounting gender, race, ethnic, disability, language, or socioeconomic impediments to career options and encouraging careers in nontraditional employment.

Title 1 - School-to-Work Opportunities Basic Program Components

Section 102. School-Based Learning Component

The school-based learning component of a School-to-Work opportunities program shall include:

(1) career awareness and career exploration and counseling (beginning at the earliest possible age, but not later than the 7th grade) in order to help students who may be interested to identify, and select or reconsider, their interest, goals, and career majors, including those options that may not be traditional for their gender, race, or ethnicity.

School-to-Work Opportunities Act of 1994, continued

Section 104. Connecting Activities Component

(7) collecting and analyzing information regarding post-program outcomes of participants in the School-to-Work Opportunities program, to the extent practicable, on the basis of socio-economic status, race, gender, ethnicity, culture, and disability

Title II - School-to-Work Opportunities System Development and Implementation Grants to States

Subtitle A - State Development Grants

Section 203. Application

(b) Contents - Such application shall include
(2) a description of how
(I) the individual assigned by the State under section 111(b)(1) of the Carl D. Perkins Vocational and Applied Technology Education Act [the State Sex Equity Administrator] will collaborate in the planning and development of the statewide School-to-Work Opportunities system.

Section 205. Use of Amounts

which may include
(9) developing a training and technical support system for teachers, employers, mentors, counselors, related services personnel, and others that includes specialized training and technical support for the counseling and training of women, minorities and individuals with disabilities for high-skill, high-wage careers in nontraditional employment.

Subtitle B - State Implementation Grants

Section 213. Application.

(2) Review and comment by certain individuals and entities-
(Identifies the State Sex Equity Administrators as one of the individuals who, if not involved in the development of the proposal, must comment on it as part of the application process.)

(b) Contents. Such application shall include

(4) a description of the manner in which
(I) [the State Sex Equity Administrator] collaborated in the development of the application

(d) State Plan. A State plan shall-

(7) describe the strategy of the State for providing training for teachers, employers, mentors, counselors, related services personnel, and others, including specialized training and technical support for the counseling and training of women, minorities, and individuals with disabilities for high-skill, high-wage careers in nontraditional employment, and provide assurances of coordination with similar training and technical support under other provision of law.

(16) describe the goals of the State and the methods the State will use, such as awareness and outreach, to ensure opportunities for young women to participate in School-to-Work Opportunities programs in a manner that leads to employment, and goals to ensure an environment free from racial and sexual harassment

Section 215. Use of Amounts.

(b) Subgrants to Local Partnerships
(2) Application. A local partnership ... shall submit an application to the State that
(A) describes how the program will include the program components described in sections 102, 103, and 104 and otherwise meet the requirements of this Act;

(C) describes the local strategies and timetables of the local partnership to provide opportunities **for all students** in the local area served to participate in a School-to-Work Opportunities program.

(4) Allowable Activities ... such activities may include, for each such program-
(H) providing supplementary and support services, including child care and transportation, when such services are necessary for participation in a local School-to-Work Opportunities program

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The School-to-Work Opportunities Act
An Opportunity to Serve All Students

By Mary Wiberg, Iowa Department of Education

Women and men with specialized technical training can expect to earn half a million dollars more in their lifetime than someone who is working at a low-skill, minimum wage job.[1] This statement alone is enough to indicate the potential of the new school-to-work transition movement to impact the lives of women and men who might otherwise be channeled into repeating the cycle of poverty. School-to-work (STW) holds promise for many, while at the same time enabling us to imagine what equitable education for all students can mean. STW, in its broadest vision, is a model for opening up the educational system through partnerships with the workplace, a model that can create access for students who have been locked out of the traditional routes to academic and economic success. STW can contextualize learning for all students; it can introduce students to a range of employment options, including careers in technology. And it can provide opportunities for students to enter and succeed in higher education.

School-to-work (STW) holds promise for many, while at the same time enabling us to imagine what equitable education for all students can mean.

Programs must meet the needs of all students, not just those perceived as being vocationally or technically oriented. If a program is perceived as one for "the forgotten half" it will become another tracking system, despite the best of intentions. STW needs to build an infrastructure for human development and productivity that includes each student.

If school-to-work programs are for everyone, programs need to pay particular attention to the needs of individuals within specific groups—students who are female, are of color, have disabilities, or who speak a language other than English. We are at a crucial point in the development of school-to-work, a point where we can draw together the best learning and experience from education, equity, community, and the workplace. As we bring this expertise together, we can evolve a new model, disaggregating the data, evaluating our efforts, and refining the work in progress. A rigorous look at how the program works for all students—for each student—provides the opportunity to build a stronger model.

What is the School-to-Work Opportunities Act?
The School-to-Work Opportunities Act was signed into law in May 1994. The act provides states with funds for designing school-to-work systems to better prepare *all* students for future careers and education. The implementation money that states receive goes primarily to local partnerships for system development at the local level. But while there has been much discussion among those involved in planning state and local STW systems, to date there has not been the broad-based involvement of all the necessary players—schools, workplaces, and community organizations.

The definition of "all students" in the School-to-Work Opportunities Act is "both male and female students from a broad range of backgrounds and circumstances, including disadvantaged students, students with diverse racial, ethnic, or cultural backgrounds, American Indians, Alaska Natives, Native Hawaiians, students with disabilities, students with limited-English proficiency, migrant children, school dropouts, and academically talented students."

STW differs from vocational education
While STW is grounded in successful vocational and apprenticeship programs, it expands beyond

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the traditional programs and reflects the constructivist model of education reform. Vocational education programs are designed to give students initial training and technical skills in specific occupational areas, such as secretarial, auto mechanics, and drafting, through a planned sequence of vocational education courses.

The act requires the states to develop a training and technical support system for teachers, employers, mentors, counselors, and others that includes strategies for counseling and training white females, people of color, and individuals with disabilities for high-skill, high-wage careers. ..

STW systems, in contrast, are designed to integrate academic learning with the contextual learning so successful in vocational education in a way that increases academic achievement but does not necessarily lead to a specific occupation. Rather it provides a solid academic and work-based foundation that enables students to choose from a wide variety of career options. Students in this system would be prepared to enter postsecondary education at both the community college and college levels, go directly into the work force, with the possibility of future education, or any number of combinations.

Yet vocational education is an important part of STW, as is math, science, and social sciences instruction. Some of the impetus for developing the STW legislation is the result of examining how other countries prepare youth for the work world through vocational education.

The STWOA legislation seeks to ensure that, in the preparation of our youth for tomorrow's world of work, every student is valued, provided with contextual learning, and has a variety of paths after high school that can lead her or him to high-wage, high-skill employment. While each local partnership will use a different strategy, the goal should be the same—to prepare our youth for productive employment and further education and, in the process, to increase our nation's international economic competitiveness.

STW systems aim to help students see the relevance of their education by providing PreK–12 students with strong career development activities and by providing both school- and work-based learning for 11th and 12th graders. By beginning with the early grades and continuing throughout the school years, we can ensure that students gain an understanding of all aspects of broad career areas such as health, human services, or engineering and technology, and of the options available to them for future careers.

The most successful STW systems will link with other work-force development initiatives at the state and local levels through collaborative planning and implementation, including the involvement of business, labor, and community organizations. This emphasis on linking workplaces with schools, and on giving PreK–12 students information about workplaces from their earliest school years on, can provide opportunities for all students, not just for vocational education students or specifically targeted groups.

How does STW meet the needs of all students?
STW systems are intended to help all students see a positive future for themselves and their families. We know this purpose cannot be achieved without strategies to meet the various needs of specific groups and individuals.

A major emphasis of the Carl Perkins Vocational Education and Applied Technology Act has been to ensure that the needs of special populations are met. The School-to-Work Opportunities Act goes far beyond Perkins in its intent. One of the purposes Congress identified in the STW act is "to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability."

The act requires the states to develop a training and technical support system for teachers, employers, mentors, counselors, and others that includes strategies for counseling and training white females, people of color, and individuals with disabilities for high-skill, high-wage careers. In addition, states are to set goals and identify the methods (such as awareness and outreach) they will use to ensure opportunities for young women to participate in STW programs in a manner that leads to employment in high-skill, high-paying jobs, including nontraditional employment. Furthermore, states must set goals to ensure an environment free from racial and sexual harassment. The STW act also requires that school- and work-based opportunities, and the activities that connect the two, be provided for all students.

Finally, the act also requires that postprogram outcomes be collected and analyzed, to the extent practicable, on the bases of socioeconomic status, race, gender, culture, and disability. The very success of the STW act will be measured by how well it does serve all students.

Challenges to serving all students
Given the intent of the law, what are the challenges to developing systems that really serve all students? Here are a few of the challenges we will be facing, followed by some recommendations.

A steep learning curve for those new to the STW concept. While the school-to-work concepts may sound simple, they really call for significant change in the way the education system functions. Designing a system with business, labor, and education as partners is new. And it takes time and effort to successfully train staff and to learn to collaborate.

Because most educators have worked only in the field of education, they lack knowledge about the expectations of the workplace and so fail to deliver education in a way that both educates their students and helps them plan for the future use of

Continued p. 5, "The School-to-Work Opportunities Act"

Models for Serving All Students

By Jenny L. Erwin, Arizona Department of Education

Molina is Pima Native American; Carla is African American; Ramon, Chicano, is third generation American; Douglas is a WASP; Lin Sue, an Asian, is second generation American; and Shalom is a recent Russian Jewish immigrant. These high school students present a unique challenge to the current educational system because of their diverse needs and experiences: one is your basically well-adjusted kid, one is a teen parent, one is a gang member, one is highly gifted, one has a physical disability, and one has a learning disability. The future of our nation depends on the success of each one of these students, but somewhere along the way we have failed them by not encouraging them to stay in school, and we have failed our economic system by not preparing them for moving into the work force. When students are not taught the skills to contribute to society, they will be dependent. We need to make an early investment in students by giving them the skills necessary to move into the workplace.

How do we help the Molinas, Carlas, Ramons, Dougs, Lin Sues, and Shaloms set goals, learn marketable skills, and find their niche in the technologically changing workplace? A goal of the school-to-work (STW) system is to greatly reduce the high rate of high school dropouts. How to accomplish this task is both an awesome challenge and a tremendous opportunity. What works? Learning experiences tied *directly* to the workplace, teamed with positive expectations for every student, result in the greatest success.

Is there a current model that can provide a framework for serving all students in the school-to-work system? No! There is no one comprehensive approach. But there are a variety of ongoing programs and strategies that have been implemented for at-risk and gifted students, females, and males of color. We can draw from the elements of effective programs and incorporate them into the school-based, work-based, and connecting activities of the total STW system.

The following three models all contain elements that are essential to the success of meeting the needs of all students.

Teen parents' flower business

On the outskirts of Phoenix, Arizona, is Estrella Mountain High School, serving predominantly Pima and Maricopa Native Americans. The casual observer to this area would not suspect there is a successful commercial flower production business run by teen parents and their agriculture teacher. The business started with one teacher's realization that too many teen mothers were dropping out of school; that no one was helping them stay in school or learn skills beyond what would qualify them for entry-level labor jobs.

An Anglo teacher with a vision saw a way to get the girls back into school and to give them and their babies an independent future. She did so first by caring strongly about the talents and skills of each individual girl. She obtained funding from the Arizona Department of Education's local STW effort, Workforce Compact, and other donations to build a commercial-size greenhouse. Then she found community partners from the banking industry, the tribe, the flower growers, and local plant distributors. Next, she helped set up a child care facility on site.

She established specific competencies for each girl to attain, including how to develop a business plan, and arranged field trips (some involving the participation of her community partners) to give the students a broad perspective on the different aspects of the industry.

Every day the greenhouse is a flurry of activity. Each morning the girls water the flowers and arrange for them to be sold at the nearby convenience store. Every Thursday the daisies and baby's breath are harvested and delivered to distribution centers in the area. The girls smile shyly and talk about their future. Some say that without this program they would be at home, with few plans, little hope, or no direction.

The first student graduated from high school this spring and will attend a nearby community college this fall. In addition, she will be working in a commercial flower production business, thanks to her real-life experience at Estrella Mountain High School. For more information about this program contact Joyce Baldwin, Estrella Mountain High School, P.O. Box 809, Route 2, Laveen, AZ 85339.

Is there a current model that can provide a framework for serving all students in the school-to-work system? No! There is no one comprehensive approach. But there are a variety of ongoing programs and strategies that have been implemented for at-risk and gifted students, females, and males of color.

Dropout prevention

The whole community is hurt when there is a high student dropout rate, but one community has found an innovative way to solve this problem. The solution came when singer and actress Dolly Parton, native of that community, designed the Buddy Contract Program for students in the Sevier County schools.

Each year, all seventh grade students in the county attend an assembly on career planning and the value of staying in school. At that time each student is assigned a "buddy," a classmate who will become a partner in the goal of staying in school over the next six years. Each student pledges to contact the Dollywood Foundation if they need special help, and those with significant barriers are also assigned an adult buddy who will be an advocate for them.

Models for serving all students . . . continued

The whole community is involved. Members serve as volunteers, tutors, counselors, dropout prevention specialists, and fund raisers because they all want their young people to be successful, productive citizens. Each buddy team that stays in the program until graduation receives a financial reward of $1,000 and is eligible to receive additional scholarship assistance.

The whole community is hurt when there is a high student dropout rate, but one community has found an innovative way to solve this problem.

This is only one phase of this innovative commitment to quality education for all students. Other aspects include early intervention efforts through strong math and reading programs in the elementary schools, teacher updates, community internships, parental involvement, and the use of applied technology in all classrooms.

What are the results of this effort? In 1992 the first buddies graduated and in 1993–1994 there were 875 buddies who completed their contract. Prior to this program, the dropout rate was well over 20 percent and today it is below 5 percent. Thanks to Dolly Parton's vision and willingness to involve the community in supporting the value of staying in school, more students in East Tennessee are making a successful transition from school to work.

For more information contact Jerry Herman, Director, Dollywood Foundation, 1020 Dollywood Lane, Pigeon Forge, TN 37863-4101, (615) 428-9604.

Annual Voc-Fest

Imagine 400 eighth graders curious about the vocational programs available to them over the next four years descending on an already active high school campus. While the logistics can be overwhelming, the value to the students is definitely worth the effort. Students in Flagstaff, Arizona, look forward to the annual Voc-Fest to get a hands-on opportunity to explore career options.

"Nothing can be more absurd than the practice that prevails in our country of men and women not following the same pursuits with all their strengths and with one mind, for thus the state, instead of being whole, is reduced to half."

The purpose of this activity is to increase nontraditional enrollment in the vocational programs and this has been accomplished every year since the program started. In preparation for this fest, all students take an interest inventory, discuss their results, and explore nontraditional career options. They share this information with their parents as part of choosing their high school courses.

Students have a variety of experiences once they arrive on campus. They are met by student guides who serve as role models and tour guides. Then each student visits, for them, a nontraditional and traditional class (for example, boys might go to a business or child care class, while girls might go to a robotics or agriculture class) to use the equipment and technology.

There is strong follow-up to the day's activities. Students prepare writing assignments and engage in decision-making activities. They also have other assignments, involving their parents and the business community, to reinforce how school is tied to the workplace.

While this is a time-intensive activity, the results are paying off. Students, parents, and teachers know that all the eighth graders are better informed about their options and can enter high school with a more realistic idea of their future.

For more information contact Beth Packard, Special Grants Coordinator, Northern Arizona University, P.O. Box 6025, Flagstaff, AZ 86011-6025, (520) 523-2210.

Listed here are elements in these STW programs that make them successful in serving all students. How many of these have been incorporated into your school-to-work planning and implementation?

___ Nontraditional career exploration and options for all students, including teen parents
___ Child care and transportation assistance
___ Nontraditional teacher and role models/peer role models
___ Community support for mentoring/job shadowing in nontraditional fields
___ Advisory committee representative of the school population
___ Collaboration with community, business, and education
___ Early intervention for at-risk students
___ Parental involvement in career planning and school outcomes
___ High expectations and financial incentives for students
___ Planning that includes all students
___ Varied instructional methods
___ Gender-neutral language
___ A safe working/learning environment, free of harassment and violence

As you face the challenges of making learning relevant for all students, remember that the ancient sages faced similar challenges. Plato recognized the need for an expansive educational system when he said, "Nothing can be more absurd than the practice that prevails in our country of men and women not following the same pursuits with all their strengths and with one mind, for thus the state, instead of being whole, is reduced to half."

Contact your local equity administrator and diversity specialist to find ways to build the above elements into your school-to-work system. Thousands of students a day, including Molina, Carla, Doug, Ramon, Doug, Lin Sue, and Shalom, are eager for you to get started. ◆

what they are learning. In addition, many educators and parents view high school as preparation for college, not as preparation for the world of work.

Recommendations: The only way to understand the related STW issues is through reading about them and discussing them at length. Materials that explain the intent and benefit of STW are needed at national, state, and local levels to help parents, educators, business and industry, and government truly understand STW systems and how to achieve them. Look for materials that focus on systemic change. State STW planners can provide professional development workshops across the state to further educate all the players on the intent of the STW act and on ways to collaborate.

Lack of widespread public awareness and understanding about the intent of STW systems, especially the emphasis on serving each student. To date, those involved in the discussion about STW have primarily been planners at the state level, vocational educators, and work-force development professionals. The focus has been on the elements of the school-to-work system and how to put them together, including what work-based learning should look like, how to develop partnerships with business and labor, and how to integrate academic and vocational learning.

Almost no attention has been paid to the issues related to the participation of *all* students in the system. The absence at national STW conferences of a focus on serving all students demonstrates clearly that many policymakers and planners do not consider equity and access priorities. At five national conferences last year I made presentations on the need to serve all students, but the issue was included only because I called the conference planners to request that such presentations be included. In recent publications on STW the term *all students* is not even defined, and it is not unusual for the terms *equity* and *access* to be entirely absent.

Recommendations: Equity advocates and others can request that conferences include a focus on what it will take to serve all students in the STW process. Request information from the federal School-to-Work Office and from state STW agencies on plans for serving all students and on the requirements at the local level to ensure that these plans are implemented.

Lack of advocacy group involvement in the planning process. Because of the speed with which the School-to-Work Opportunities Act is being implemented, the lack of widespread dissemination of information to the public, and the assumption on the part of many that STW is "just more vocational education," advocacy groups (whether their focus is gender, race, or disability) either have not learned about STW or have expressed no interest in STW.

Even within state government, the planning for STW systems has not included staff who work with special education, race and sex desegregation, or other special population programs. There are two notable exceptions. In Colorado, STW planners have worked closely with special education and, as a result, obtained additional funding to support STW. And in Iowa, I have served as an active member of the STW planning team, including contributing equity language to the state's proposal for an implementation grant. In many states, however, equity professionals have not been asked for their input.

In recent publications on STW the term **all students** *is not even defined, and it is not unusual for the terms* **equity** *and* **access** *to be entirely absent.*

Recommendations: Members of advocacy groups should request that STW be identified as a priority issue for consideration and action by their groups at all levels. They can then volunteer to assist the state in identifying strategies that can effectively ensure the participation of all students in STW. At the local level, advocates can volunteer to be part of the planning and implementation process through participation on committees or in working conferences.

Major focus on the secondary school level in the development of school-to-work systems. Because the ultimate goal of STW is to better prepare youth for the transition from school to work and further education, the major focus within the planning for STW has been on what happens at the secondary level, especially in 11th and 12th grade. But if students are to make well-thought-through decisions regarding a career path by the end of 10th grade, local STW systems have an important responsibility to provide a context about the world of work to PreK–10 students.

From research studies we know it is crucial to reach girls, males of color, students whose first language is not English, poor students, and students with disabilities while they are still in grade school, if we are to engage them in understanding the broad career opportunities in their future and the relevance of education. In December 1994 I visited Walks of Life, a STW program in the Bronx. One elementary school principal, a man absolutely convinced of the importance of STW activities at the elementary and middle school level, said to me, "We have kids in our school who have never seen a parent go to work. If we can help them understand what work is about now, their likelihood of success in high school will increase exponentially."

We know it is crucial to reach girls, males of color, students whose first language is not English, poor students, and students with disabilities while they are still in grade school, if we are to engage them in understanding the broad career opportunities in their future.

Among the strategies the school uses to accomplish this exposure to the world of work is an intergenerational project between the fifth grade classes and local nursing homes. Students visit, learn what work and life were like for residents, write letters, and also observe the staff within the nursing home and the work that they do. The positive outcomes for students are enormous.

Recommendations: Ask your state planners about the STW focus planned for elementary and middle schools. Specifically request information

Continued p. 6, "The School-to-Work Opportunities Act"

The School-to-Work Opportunities Act . . . continued

There is tremendous resistance from many people to both designing and providing the services necessary to allow the new STW systems to truly serve all students.

on career development activities. At the local level, request that STW planners include elementary and middle school personnel and parents in the planning process.

Perceived lack of resources to truly serve all students. In a public meeting to plan a state STW system, the state planning team was discussing how to use federal school-to-work funds at the local level. The state gender equity administrator pointed out that providing funding for the needs of teen parents—child care, transportation, and so on—was important. A team member turned to her and said, "The School-to-Work Opportunities Act is not a special populations bill. It's to serve 'all students.'" She responded, "Well, I think teen parents probably fall under the definition of 'all students.'" To which he responded: "Well, we're redefining 'all students.'" Unfortunately, this story is not an isolated incident. One colleague told me that we didn't have to deal with that equity stuff any more, STW was to serve all students!

The fact is there is tremendous resistance from many people to both designing and providing the services necessary to allow the new STW systems to truly serve all students. The absence of attention to equity and access issues is indicative of this resistance, as is the lack of knowledge about materials and strategies already developed that could be used in STW systems. The reality is that there are resources available that can help the new systems achieve participation by "all students." But successful implementation calls for creative thinking.

Recommendations: Resources available to you at the local level may include a variety of options: *Special education programs* that already have established STW transition strategies for students. In many cases, these same strategies could work with students who are not disabled. *Chapter 1 funds*. In Iowa these funds are used primarily for math and reading remediation in the elementary schools. STW strategies and materials could be developed for use by the Chapter 1 teachers to help them engage elementary students in their learning—with hands-on experience an essential strategy. *Teen parent programs* funded by human service agencies, *voc ed funds*, and so on. Building in STW elements as a requirement for accessing the services is an easy task—many programs already do this. *At-risk programs*. In Iowa, every school must have a plan for serving at-risk students. Again, engaging these students in contextual learning experiences will result in lessening the degree to which they are at risk. *Dropout prevention programs*. The issue of dropouts is critical nationwide. STW strategies can be built into existing programs, often with little additional cost. *Equity programs*. For at least the next year, in every state numerous projects are funded to eliminate gender bias in vocational education and to provide nontraditional opportunities. The strategies such programs implement are a natural fit with the local STW system building. While Carl Perkins funds may end in a year, the impact of the projects can continue.

The next steps

Planning at the local level needs to include an analysis of who "all students" are and what resources may be available to serve them. We can share our resources. One example might be the development of technical assistance guides that identify successful state and national strategies developed through Perkins equity funds, special education, dropout prevention programs, and so on. We have a wealth of existing knowledge that can be incorporated into STW systems. State STW planners in all states could benefit from training on how to access resources (a train the trainer model), with the goal of maximizing the use of those resources already developed.

The goal of achieving school-to-work opportunities for all students is challenging. I believe it can be achieved, but only if advocates are actively involved in working at all levels to ensure that the intent of the law to serve all students is indeed a focus of our STW systems.

Note

[1] New York State Occupational Education Equity Resource Center, *Voice* (March 1993). ◆

Electronic Networks

Educational Equity List

EDEQUITY (Educational Equity Discussion List) is an international Internet discussion list focusing on theory and practice of equity in education in a multicultural context.

To subscribe, send the message *subscribe edequity* to MAJORDOMO@CONFER.EDC.ORG
(Do not use a "subject" line.)

School-to-Work Network

STWNet is an international Internet discussion forum on school-to-work transition, the U.S. Youth Fair Chance initiative, and all other school-to-work related issues.

To subscribe, send the message *subscribe* stwnet to MAJORDOMO@CONFER.EDC.ORG
(Do not use a "subject" line.)

Resources

. . . continued from p. 8

Working Papers Series
Working papers present in-depth discussions on current gender equity issues.

Forthcoming fall 1995: *Gender, Discourse, and Technology* #2759 $4.00
Teaching Mathematics Effectively and Equitably to Females #2744 $4.00
Legislation for Change: A Case Study of Title IX and the Women's Educational Equity Act Program #2749 $4.00

Gateway to the Future: Skill Standards for the Bioscience Industry
Developed through the collective efforts of nearly 1,000 people representing bioscience workplaces, education institutions, labor unions, and trade associations. *Gateway to the Future* provides a sound starting point for development of education and training systems to prepare people for bioscience careers. For ordering information, call (800) 225-4276, extension 2397. ◆

Training and Consultation
The Center for Education, Employment, and Community (CEEC) at EDC, with its WEEA Publishing Center, offers trainings and consultations to help ensure equitable outcomes for school-to-work programs. CEEC is working with several states to plan effective school-to-work initiatives that integrate current research and best practice in education reform, curriculum development, and teacher and work-mentor training for all students. CEEC's approach is a unique balance of academic knowledge, technical skill development, workplace skills (SCANS), and hands-on implementation. We assist in the challenge of adapting national skill standards and academic goals to local needs and then use local standards to shape the school- and work-based learning as well as the connecting activities of the school-to-work system.

Our problem-based learning approach helps young people practice higher-order thinking skills as they prepare to succeed as workers in high-performance workplaces. CEEC works with local stakeholder groups as they become communities of learners and implementers of their own local seamless education-to-employment system. For more information or to schedule a training, contact the WEEA Publishing Center at (800) 225-3088.

Additional resource organizations

American Federation of Teachers
555 New Jersey Avenue, NW
Washington, DC 20001
(202) 879-4400

American Vocational Association
1410 King Street
Alexandria, VA 22314
(800) 826-9972

Center on Organization and Restructuring of Schools
1025 West Johnson Street, Room 659
Madison, WI 53706
(608) 263-7575

Coalition of Essential Schools
Brown University
1 Davol Square
Providence, RI 02903
(401) 863-2408

Coalition of Labor Union Women
1126 16th Street, NW
Washington, DC 20036
(202) 296-1200

The College Board
45 Columbus Avenue
New York, NY 10023-6992
(212) 713-8000

Council of Chief State School Officers (CCSSO)
One Massachusetts Avenue, NW, Suite 700
Washington, DC 20001-1431
(202) 408-5505

ERIC Clearinghouse on Adult, Career, and Vocational Education
Ohio State University
1900 Kenny Road
Columbus, OH 43210-1090
(614) 292-4353 or (800) 848-4815

ERIC Clearinghouse on Counseling and Student Services
University of North Carolina at Greensboro
School of Education
Greensboro, NC 27412-5001
(919) 334-4114 or (800) 414-9769

The National Center for Research in Vocational Education
2150 Shattuck Avenue, Suite 1250
Berkeley, CA 94720-1674
(510) 642-4004

National Education Association
1201 16th Street, NW
Washington, DC 20036-3290
(202) 822-7783

Office of Vocational and Adult Education
U.S. Department of Education
600 Independence Avenue, SW, Room 4518
Washington, DC 20202-7242
(202) 260-9576

School-to-Work Opportunities Office
400 Virginia Avenue, SW, Room C-100
Washington, DC 20024
(202) 401-6222

Skill Standards Team Office
U.S. Department of Labor
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Washington, DC 20210
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Continued p. 7, "Resources"

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The *WEEA Digest* is published by the WEEA Publishing Center, a project at Education Development Center, Inc., under contract #RP92136001 from the U.S. Department of Education, Office of Educational Research and Improvement. Opinions expressed herein do not necessarily reflect the position of the U.S. Department of Education and no official endorsement should be inferred.

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Mentoring in Educational Settings

Unresolved Issues and Unanswered Questions

By Dr. Olga M. Welch, University of Tennessee

For over a decade, schools have seen mentoring as playing a critical role both in fostering student success and in facilitating educators' professional development and mobility. In part because schools have been exploring new ways to address diverse student needs, an enormous amount of interest has been generated in the possibilities inherent in mentoring. Mentoring has become such a popular strategy that the view that a role model, mentor, or sponsor is necessary for success is now so widely held that it seems self-evident.[1]

Despite the proliferation of research and literature on mentoring, it remains unclear whether authors are speaking about the same phenomenon.

What is mentoring?

The prototype for a mentoring relationship seems to have derived from Greek mythology. As the story goes, Odysseus, a leader in the Trojan war, entrusted the care of his son, Telemechus, to his good friend Mentor. While Odysseus was away at war, Mentor was to act as a surrogate parent, teacher, role model, advisor, guide, and counselor to the inexperienced youth.

This description of Mentor's role became the foundation for more current characterizations of the mentor relationship. Over the centuries, to talk about mentoring has meant to talk about a relationship between a young adult and an older, more experienced adult who supports, guides, and counsels as the young individual learns to navigate within the adult world.[2]

Though the word "mentor" still holds these connotations, it has also come to describe a variety of relationships that occur in different contexts and with diverse emphases.

Mentoring in schools

Educational settings exhibit a variety of mentoring models designed for different purposes. A look at these models reveals programs that range from those matching students with teachers, advisors, or community leaders, to programs for supporting new teachers or helping teachers move into administration.

Programs for students are generally designed with the goal either of helping them academically or of helping them develop strong vocational skills and contacts. Mentoring experiences for faculty on the other hand are more often designed to help educators adjust more easily to a new position—as in the case of pairing new teachers or new administrators with more experienced colleagues—or to help them gain skills and contacts to move up and out of their current positions. An example of the latter includes matching a teacher with an administrator who helps the teacher develop administrative skills.

Mentoring programs have also been used to enhance the chances of African Americans and Latinos succeeding in situations in which they have had little previous experience.[3] For instance, in universities and colleges, where faculty and administrators are traditionally White and male, students of color often have less access than White students to informal networks and support. Mentoring has been seen as an effective approach toward reducing isolation and providing support for students of color.[4]

Does mentoring work?

As a dissertation project, S. Villani conducted in-depth interviews in an educational setting with 9 mentors and 15 protégés who had been involved in mentoring relationships either during the protégés'

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Mentoring in educational settings . . . continued

academic lives or in the early stages of their careers. The study's findings suggest that both mentors and protégés typically viewed the mentoring relationships as influential. This was true particularly for women, who often saw themselves as needing to overcome internal barriers to the realization of their career aspirations.[5]

Additional studies in education have supported the notion that mentoring was beneficial in reducing the time needed for advancement into management or public school administrative positions.[6]

There remain, however, many unanswered questions about how, why, and where mentoring works.

Unresolved issues

The above-mentioned studies notwithstanding, there is not uniform agreement about (a) the roles a person must assume for the relationship to be identified as mentoring; (b) the difference between a mentor and a sponsor; (c) how a mentor normally selects a protégé; and (d) whether mentoring occurs differently and with different results for women and minorities.[7] Thus, while research identifies the nature and dynamics of established mentoring relationships, how they occur in organizations at a variety of levels, as well as the roles a mentor might assume, there is less clarity about other important issues.

For a number of mentors, females as well as minorities are perceived to be unduly sensitive to critical feedback. As a result, mentors tend to filter the information given to these groups.

As J. M. Henderson notes: "One major difficulty in drawing conclusions from the existing research [on mentoring] is the lack of a clear conceptual framework about the definition of mentoring, and the roles a mentor must assume. Because of this, there is no clear basis upon which to conduct further research.

"The research also does not address whether or not mentoring [occurs] differently in different types of organizations, and with differing results."[8] Most importantly, little documentation exists to confirm the commonly held assumption that mentoring is critical for advancement into the highest levels of organizations.

Thus, despite the proliferation of research and literature on mentoring, it remains unclear whether authors are speaking about the same phenomenon.

An equally important issue involves cross-gender mentoring. Especially in relation with the definitional and role-related issues raised earlier, when women, and especially women of color, are considered for mentoring, distinct questions and concerns are raised. Many of these arise from uncertainties about whether the mentoring process is or should be the same or different than that for others in the organization. Conscious and unconscious stereotypes and biases add to these uncertainties.

While research findings are mixed in terms of conclusions on cross-ethnic mentoring relationships, it appears that mentors of the same ethnicity as their protégés can often offer added benefits, especially for students of color. For instance, a Latina mentor may be able to help a Latina protégé resolve a discontinuity between the protégé's cultural or community values and the institution's values.[9] Y. T. Moses points out that "many potential mentors are unfamiliar with Black issues and women's issues and may be unable to relate to the needs of Black women students."[10]

On the other hand, other researchers suggest that cross-gender and cross-ethnic mentoring partnerships add other benefits. For instance, when the mentor is White and male and the protégé not, the protégé may have an opportunity to learn more about those who currently run educational institutions.[11]

Whatever may be the final assessment of these relationships, it is a fact that because White males make up the vast majority of educational administrators, cross-gender and cross-ethnic mentoring is inevitable, at least in some programs. It is also true that special issues arise because of these relationships.

Cross-gender mentoring

K. E. Kram offers one description of the psychosocial elements of a good mentoring relationship. These include role modeling, acceptance-and-confirmation, counseling, and friendship: "The junior person finds support for who he or she is becoming in a new work role that increases a sense of competence, effectiveness, and self-worth. In turn, the senior person can satisfy important needs at midlife that increase a sense of competence, effectiveness, and self-worth."[12]

Focusing on female-male mentoring partnerships, Kram discusses in particular the importance of role modeling, suggesting that in any junior-senior work relationship, both individuals benefit. She also stresses that the identification and transference that underlie the role modeling function are more complex in cross-gender relationships.

Some research suggests that men and women are inclined to assume stereotypical roles in relating to each other in work settings.[13] Kram argues that these roles are defined by assumptions and expectations about appropriate behavior for each sex. In order to reduce the uncertainty, ambiguity, and anxiety created by the emergence of cross-gender work relationships, men and women rely on what is familiar. In doing so, they sometimes unknowingly assume traditional roles learned from past situations. These roles tend to constrain behavior and to reduce individual competence and effectiveness.

People perpetuate stereotypical roles because it is what they know and are most comfortable with. In developmental relationships, like mentoring, the challenge becomes devising strategies of behavior that permit men and women to

Continued p. 6, "Mentoring in educational settings"

Learning from the field

Mentoring projects in field-based settings

By Heidi Lynch, Center for Equity and Cultural Diversity

Mentoring programs for women and girls are currently found in a wide variety of settings around the country. Ranging from efforts to support academic achievement to career education and development endeavors, these programs offer a wealth of field-based learning that can inform other programs.

The mentoring programs highlighted here illustrate ways in which mentoring can be incorporated into educational settings. These programs vary in many aspects, including how participants are recruited, the kind of training provided, who the relationships involve, and the kind of guidance partnerships are given. What these programs have in common is that all exhibit ways in which women are helping women, and all use a multicultural perspective—their very approach is shaped by the recognition that while all women share some experiences, they also have many differences in views and needs. As we evolve a concept of mentoring, programs like these can help us focus on what mentoring is, what works, and why.

High school plus: Choose Nursing!

Four young women have been accepted into nursing programs and are on their way to successful careers. A major catalyst in the process has been the Choose Nursing! Program at Boston's Beth Israel Hospital.

Each year, 15 young women of color and low-income females are selected from the Boston public high schools to participate in this innovative two-year program. Choose Nursing! uses a comprehensive, multifaceted approach to address education and training, recruitment into the health professions, and early intervention career development. The program offers students 1,000 hours of hands-on experience and learning with professional nurses and with patients. In addition to career-related experiences, the program provides diagnostic academic testing, educational planning and counseling, liaison with students' teachers and counselors, individualized assistance in applying for college and financial aid, and help in preparing for college entrance exams.

Students are selected for the program based on their motivation to become professional nurses and to continue their education. While students must have a C+ or better in every academic class they are enrolled in to participate, one of the focuses of the program is to encourage students academically and to provide remediation and supplemental academic work as needed. Mentors are professional nurses who have been recommended by their nurse managers, and who have completed a daylong training session.

The program starts the summer before students' junior year with an intensive six-week training, and continues throughout a two-year period. Students and nurses spend a number of hours a week together during the school year focusing on development of clinical skills, reflection on the program experience, and planning for the future. Students receive tutoring in academic classes and participate in a number of activities designed to help them select a good college nursing program and gain admission. Partnerships with area schools of nursing offer additional opportunities, including the chance to experience actual nursing labs and visit college nursing programs.

One participant in Choices reported, "Without this program, I never would have even considered coming to college."

The mentoring component of this program was only recently formalized. From the beginning of the program one-on-one work with a nurse was a critical part of the course. In the 1992–93 year, this relationship was validated and supported with mentor training for nurses. A set of materials developed through the WEEA Program—*Hand in Hand: Mentoring Young Women*—was adapted for use in planning activities and in assisting students to reflect on their experiences.

In three years of operation, students have overwhelmingly met the expectations hospital staff had for them. After completing the summer intensive session, over 90 percent of the students express a high interest in the nursing field, and after 10 months of the program, 86 percent continue to declare a high interest. As of the end of the second year of the program, 94 percent of the students had applied to colleges, with 88 percent applying to nursing programs.

For additional information about this program contact Eileen Hodgman, Director, Choose Nursing!, Beth Israel Hospital, 132 Brookline Avenue, BL 312, Boston, MA 02215, (617)735-3949.

College for all: Diversifying the student body

Mentoring is currently being used in a number of college and university settings to attract and retain a more diverse student body. One such program, Choices: Minority Women's Perspectives on Equity Issues, at Triton College, provides a mentoring component for women of color that supports them during their college experience, and encourages them in setting professional goals. One participant in Choices reported, "Without this program, I never would have even considered coming to college."

Begun under a WEEA grant in 1989, Choices paired women of color who were entering or already in their first semesters of college courses with a faculty advisor-mentor. Students were recruited into the program through targeted mailings to Triton students and high school students, and

Continued p. 4, "Learning from the field"

> ***"One of the most exciting things about this project has been that we have discovered so many resources and role models within our own organization."***

were selected based on applications. The yearlong program enrolled 21 participants, including African American, Vietnamese, Colombian, and Native American students.

Each mentor worked with their protégé to help them learn about and become comfortable with the college environment, and learn what was expected of them in classes and in behavior. As a vast majority of participants were among the first in their families to attend college, this supporting role was often cited by participants as vital to their ability to adjust to the college environment. Mentors also served as resource people, helping protégés learn where to go for specific kinds of help or materials. During the year, the students kept journals in which they recorded their feelings and reactions to school and the program.

This mentoring component supported a comprehensive program that included academic, financial, and life skills courses and counseling. Cooperative education work assignments were directed toward areas of student career interest, and gave students a modest but needed income.

Several participants of the program reported that they would not have considered college an option without the outreach and support they were given by the program. Although discontinued for lack of funding, the program generated much interest among other students who asked to participate in subsequent years.

For additional information contact Dr. Charlotte Lee, Triton College, 2000 Fifth Avenue, River Grove, IL 60171, (708)456-0300.

Mentoring for sports-related careers

The Womentoring Program, a mentoring program run by the National Association of Girls and Women in Sports (NAGWS), is encouraging women to pursue sports-related careers and to support one another in those positions. In place for several years, the program has encouraged women in careers in sports and has provided support to women pursuing training and placements. For example, one young woman who participated in the project while attending graduate school is now teaching and coaching basketball at a public high school, thanks in large part to the guidance and support of her mentor.

The program began out of the need to increase the number of women of color in sports-related fields, a goal of NAGWS and of the minority representation division of NAGWS. Upon implementation of the program, NAGWS received so much interest in the program that they expanded the program to include all women in sports, and reassigned it to the professional development division of NAGWS.

The Womentoring Program is an ongoing program that continually pairs up mentors and protégés. The program solicits applications for both career mentors and protégés. Mentors are selected based on their multicultural awareness and willingness to grow; their sensitivity and understanding of values, perspectives, and lifestyles of different cultures; and their ability to interact effectively in a pluralistic society. Protégés must be willing to be active participants in the program, and to question and listen to advice related to career development.

Once pairs are assigned, initial assistance is provided to both protégés and mentors in the form of an introductory kit to assist in starting the relationship. The way in which the mentor and protégé will interact, as well as the frequency with which they will meet, is decided between the two, with each responsible for submitting periodic progress reports.

For additional information about this program contact the National Association for Girls and Women in Sports, 1900 Association Drive, Reston, VA 22091-1599, (703)476-3450.

Encouraging education leaders

"One of the most exciting things about this project has been that we have discovered so many resources and role models within our own organization" states one participant of a mentoring project for women educational administrators in the Texas Panhandle. Another adds, "In this area we can still often be the only woman administrator in a school district. There can be a real feeling of isolation."

The Female Educators' Mentorship Project in Amarillo, Texas, tackled the perennial problem of underrepresentation of women in educational leadership roles. The percentage of women administrators in the Texas Panhandle reflects a national predicament: educational administration is not representative of the pool from which administrators come, neither in terms of gender nor race/ethnicity. Data collected by the U.S. Equal Employment Opportunity Commission show that though female educators outnumber male educators two to one, almost 80 percent of all principals are males. Less than 10 percent are men of color, and approximately 5 percent are women of color.

The project, funded through the WEEA Program and run by the Panhandle Council of Women School Executives, solicited applications both for mentors and for protégés. A selection committee of seven persons from the council chose the mentors for the program based on their professional goals, their learning and working styles, their views on education, and their description of an ideal mentor and protégé. Initial screening of the protégé applications was done by the same screening committee, which gave preference to women newly hired into subadministrative positions or women working toward these positions. The mentors then made the final selection, choosing a woman they wanted as a partner.

After an initial two-day training retreat—which included activities designed to strengthen skills in management, leadership, communication, interpersonal skills, team building, and career development—specific activities to be carried out were designed and planned by the mentoring partnerships themselves. The frequency of meetings was up to the pairs, and activities included specific skill development, shared projects, shadowing, and trouble-shooting. Three follow-up workshops were provided throughout the year, the contents of which were selected by the participants. In addition, informal get-togethers, such as breakfasts and parties, were initiated throughout the year by project participants.

During the yearlong mentoring project, two of the protégés were appointed principals, one of whom is now one of the few Latinas in the Panhandle holding this position. Several others, both protégés and mentors, have received promotions since then. "I was recently promoted from an education specialist to administrative assistant for my region, an advancement that I owe in large part to my experiences and contacts from the program," states Hollis Parker-Grimes, who participated in the project as a protégé. Her mentor also won a promotion during the last year.

Although the program is no longer conducted on a formal basis, mentors from the council are still available on an informal basis. Those interested in mentoring other women announce their availability in the council's newsletter.

For additional information about this program contact Hollis Parker-Grimes, Region 16 Education Service Center, P.O. 30600, Amarillo, TX 79120, (806)376-5521.

Role models for career development
Mentoring partnerships formed a support mechanism for a WEEA-funded job training and internship project developed and run by Volunteers Clearing House in Fort Collins, Colorado.

The clearing house works primarily with low-income women. Its many projects and services are designed to draw in women who may feel isolated or who are suffering from poverty-related problems, and to slowly but surely help them work toward empowerment, taking charge of their lives, and planning their futures.

The organization offers a number of activities and classes for registration fees of around $3.00. The job training and internship project fit into the overall offerings and worked in a number of ways to help participants with self-esteem, literacy, life skills, on-the-job behavior, and high school diplomas or GEDs. Fifteen women participated: eight Latinas, five Whites, and two Native Americans.

The mentoring component supported the work of this project, teaming participants primarily with women of color from the low-income community in which the participants lived, and who had worked through poverty-related issues, had set and achieved career goals, and who had time to devote to such a project. The project staff looked for some measure of personal success and a sensitivity to the problems of women, people of color, and poverty.

For instance, mentor Guadeloupe Salazar was from the same neighborhood as the participants. As director of Colorado State University's El Centro Hispanic Services, she provided a strong role model in placing great importance on retaining her Latino culture, her experience at career development, and her belief in giving back to the community.

As director of Colorado State University's El Centro Hispanic Services, she provided a strong role model in placing great importance on retaining her Latino culture, her experience at career development, and her belief in giving back to the community.

Mentors first met together, in a session that introduced them to the organization's program and services, the kinds of women they would be working with and their needs, and information about productive mentoring. Requirements for mentors were also outlined: a willingness to meet for at least a year; the ability to be a positive role model in dress, punctuality, and professionalism; and an understanding that the relationship was to be supportive rather than fostering dependence.

Mentors and protégés then met in a group of all the participants, where the expectations and goals of the project were discussed. The timeline suggested by the project staff was to spend three months getting to know one another, setting goals, and deciding on a plan of action. During the rest of the year, the partners were to work toward the goals they decided upon. Pairs met two to three hours a month, and could attend monthly "mini-seminars" on such topics as assertiveness, goal setting, employer expectations, academic and vocational opportunities, and appropriate work dress. Project staff stayed in close contact to ensure that relationships continued to be mutually satisfying.

The job training project was offered only during one year, but role models and mentors are still provided on an informal and volunteer basis within Volunteers Clearing House.

For additional information about this program contact Carolyn Andrews, Volunteers Clearing House, 401 Linden Street, Fort Collins, CO 80524, (303)493-0909.

Additional mentoring contacts and resources
International Mentoring Association
A121 Ellsworth Hall
Western Michigan University
Kalamazoo, MI 49008-5161
(616)387-4174

Ohio Leadership in Educational Administration Development
623-H Park Meadow Road
Westerville, OH 43081
(614)891-1229

Mentoring Newsletter
Kay La Bold
P.O. Box 61070
San Angelo, TX 76906
(915)942-0494 ☐

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interact in a variety of ways that are appropriate within a given work context.

In cross-gender developmental relationships, while women face dilemmas similar to those of their male counterparts, there are others that are unique to being female in male-dominated organizations.[14] This can bring special issues to the relationship.

For instance, concerns about the appropriateness of a particular behavior may appear unwarranted to a male mentor who does not understand that what works for a man may not work for a woman. (The same might be said about relationships across race and ethnicity.) Concerns about balancing work and family commitments are exacerbated for women who are simultaneously advancing their careers and assuming the roles of wife and/or mother. These unique gender-related concerns make it difficult for male mentors to empathize, to provide role modeling, and to identify with their female protégés around these issues.[15]

The behavior of female protégés receives closer scrutiny than that of their male counterparts. In some instances, their work is held to a higher standard of performance.

Project Mentor

Several years ago, with my colleagues Dr. Norma Mertz and Dr. Jan Henderson, I studied career advancement mentoring across three organizations: business and industry, higher education, and governmental agencies.[16] One aspect of our study involved an examination of the role of gender and race in the selection of protégés and the development of the relationship.

Four issues emerged from the data. First, our findings suggest that it is difficult for some people to accept a cross-gender mentoring relationship because of a perception that the relationship may be other than professional in nature. For example, a female protégé may be seen as using her physical attributes to get ahead and the male mentor as succumbing to them.

The ease with which inappropriate motives are ascribed to this kind of relationship hurts all involved—the mentor, the protégé, and the organization. Stereotypes, gossip, and half-truths work to deny the competence of the protégé and impugn the motives of the mentor. By implication, the ability of the protégé to have secured the position on her or his merit is questioned. While most school-based mentoring programs involve students and faculty, misperceptions of the relationships cannot entirely be ignored. For example, a male counselor who takes a particular interest in the progress of a promising female student may have his motives questioned.

Risk is a second issue in cross-gender mentoring relationships. In our study, male mentors were candid about the "risks" involved in working with female protégés. Specifically, they talked about the perception that these individuals do not constitute a critical mass in most organizations, particularly at the highest levels. Consequently, the judgment of the mentor is more likely to be scrutinized when the protégé is a woman.

In educational settings, this was most often seen in situations in which a senior level person, for example in central administration, had selected a promising female administrator to mentor. Because there are few female superintendents, there was a tendency to believe that women could not or would not make it to the top. Thus, the way in which others view the relationship was colored by that perception.

Critical feedback is essential to the growth of the protégé in a mentoring relationship. However, our study suggests that male mentors are reluctant to provide such feedback to a female protégé. For a number of mentors, females as well as people of color are perceived to be unduly sensitive to critical feedback. As a result, mentors tend to filter the information given to these groups. In educational settings, such filtering deprives promising students and faculty of the kind of information they need to grow and develop. No mentoring relationship could survive such intellectual duplicity.

Finally, the study findings indicate that the behavior of female protégés receives closer scrutiny than that of their male counterparts. In some instances, their work is held to a higher standard of performance. This can be a double burden for females of color. Conversely, if the performance fails to measure up in some way, it is taken as a sign not only that the individual does not measure up, but that the performance of the group (females) represented by the individual is similarly deficient.

An illustration of this situation can be found in higher education, where in some cases, promotion and tenure is granted to female faculty much later than to their male counterparts, even when they have similar qualifications.

While these findings do not constitute exhaustive data on cross-gender mentoring relationships, they do suggest important issues for those interested in planning mentoring programs in educational settings.

Models for mentoring

With the current emphases on peer and student-adult mentoring, the definitional and role-related issues and questions discussed earlier cannot be ignored. Several researchers are beginning to examine the conflicting findings on mentoring and to challenge conventional conceptualizations of the relationship. For example, M. R. Schockett and colleagues have developed a model of mentoring that incorporates Kram's phases of initiation, cultivation, separation, and redefinition, but focuses on collaborative roles for the mentor and protégé.[17]

Next steps

If we believe that mentoring offers some benefits in certain settings—and there is some data to suggest that it can—it is critical that we reach some agreement regarding a number of aspects of this

Continued p. 7, "Mentoring in educational settings"

Resources . . . continued

Choosing Occupations and Life Roles (set), #2516 $45.00
Too many students choose careers on the basis of romantic, idealized, and stereotyped views about "appropriate" occupations. This four-volume set—*Teacher's Handbook, Examining Sex Bias, Looking at Jobs*, and *Sex Bias and Work*—can be used by mentors to combat stereotyped thinking about career selection and help stimulate informed, unbiased choices.

The Whole Person Book: Toward Self-Discovery and Life Options, #2215 $14.25
Contains a host of imaginative activities to help the mentor guide students to examine their personal values, talents, and interests. Students match their skills and personalities with job requirements and probe the personal and social reasons for their career choices.

Barrier Free: Serving Young Women with Disabilities, #2732 $8.00
A step-by-step training manual that can lead mentors through a process of greater awareness on both a personal and professional level and help them examine some important issues that disabled young women—just like all teenaged girls—face: career exploration, independent living, and sexuality.

Project CHOICE: Creating Her Options in Career Exploration, #2140 $30.00
This unique and comprehensive handbook outlines a 14-week career development program specifically targeted at talented adolescent women. Its basic purpose is to broaden these young women's career options by identifying their personal and cultural barriers (especially those arising from gender-role stereotyping and socialization) and by engaging them in activities designed to overcome obstacles. Helps girls to get a clear sense of who they are and to see their strengths. ☐

Mentoring in educational settings . . . continued

concept. At present when we talk about "mentoring," we are talking about any number of relationships between people, in widely divergent settings, and with a range of purposes. Without clarity on the concept, it is impossible to conduct research to help us know whether or not mentoring will accomplish what we want it to.

We must begin to define a concept that describes what mentoring looks like: What kind of setting are we referring to? How strong or personal is the relationship? To what end is the partnership directed? What are the roles each person plays? What are the expectations of each partner?

Educators considering mentoring programs should examine with a critical eye the information that we now have on the issue. It is clear that mentoring does not offer the panacea that many hoped, but there is also research that tells us that in certain settings participants benefit from programs. In order to evolve our understanding of mentoring and to conduct useful research on the subject, researchers and field-based educators need to clarify what we call mentoring, and to collaborate to document what works and what doesn't.

At present, when we talk about "mentoring," we are talking about any number of relationships between people, in widely divergent settings, and with a range of purposes.

Notes

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[2] K. E. Kram, *Mentoring at Work: Developmental Relationships in Organizational Life* (New York: University Press of America, 1988); Murray (1905) cited in J. M. Henderson, *Mentoring: Is It Really Necessary for Advancement in Business and Industry, Education, and Government?* (Ann Arbor, Mich.: University Microfilms, 1990).

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[5] S. Villani, *Mentoring and Sponsoring as Ways for Women to Overcome Internal Barriers to Heightened Career Aspirations and Achievement* (Ann Arbor, Mich.: University Microfilms, 1983).

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[11] M. P. Rowe (1989), cited in Jacobi, p. 519.

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[15] Kram, pp. 106–7.

[16] N. Mertz, O. Welch, and J. Henderson, *Executive Mentoring: Myths, Issues, Strategies* (Newton, Mass.: WEEA Publishing Center/EDC, 1988).

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Resources for mentors and mentoring programs

The products of the Women's Educational Equity Act (WEEA) Publishing Center provide ideas and activities for mentoring programs designed to empower female adolescents and women in schools and in businesses. Developed with funds from the WEEA Program, the materials may be purchased by mail or phone. Orders under $25.00 must be prepaid. For prepaid orders, add $2.25 shipping for orders under $25.00; add $4.25 for orders $25.00 and over. For a complete listing of materials contact the WEEA Publishing Center at 800-225-3088 (in Massachusetts call 617-969-7100).

Hand in Hand: Mentoring Young Women (set). **Guide for Planning, Implementing, and Evaluating a Mentoring Program,** #2685 $17.50; **Ideabook for Mentors,** #2686 $8.50; **Student Career Journal,** #2742 $6.00

Used by a wide range of counseling, at-risk, and career exploration programs, this set was developed in conjunction with the Mentor Training Project in Portland, Oregon. The field-tested materials train career women of color to be effective mentors for high school girls of color. The *Ideabook* serves as guidance for mentors and students for their time together. Each student uses the *Journal* to record their thoughts and insights as they learn about themselves, dispel fantasies about the future, and begin planning for a realistic adventure toward adulthood. This set was adapted for use in a hospital setting by the Choose Nursing! Program, described on page 3.

Chart Your Course and **Building Partnerships** (set), #2703 $16.00

An innovative career exploration program for young women, *Chart Your Course* includes activities to help young women increase their knowledge of career options and generate useful skills. Using *Building Partnerships*, mentoring programs can plan and implement student career institutes on industry sites. The high-tech industry/educational equity model uses the actual workplace and career counseling to encourage young women to enter and succeed in nontraditional education and career choices.

Sandra, Zella, Dee, and Claire: Four Women in Science (17-minute video), #2655 purchase $43.00, #2656 rental $7.00

Perfect for mentoring programs as a vehicle for encouraging young women to consider such careers as that of astronomer, veterinarian, laser physicist, and engineer.

Steppin' Up and Moving On: A Career Education Program for the Urban Noncollege-Bound Student, #2435 $7.50

A necessity for mentoring programs that are working to expand the career options of urban students of color, especially females who are not college bound. The curriculum helps students assess talents and goals, learn about the options open to them, and build necessary skills. It all adds up to a rewarding, proven program that opens doors.

Executive Mentoring: Myths, Issues, Strategies, #2712 $8.00

Developed to provide guidelines to top-level executives as they develop mentoring programs and assume the role of mentors. *Executive Mentoring* has a wide range of applications because of its unique focus on the nature of mentoring from the perspective of the mentor. Coauthored by Norma T. Mertz, Olga M. Welch, and Janetta M. Henderson, it assesses the mentors' needs, defines the problems they face, and examines the role mentoring plays in their organizations. Included are topics such as why mentor, what's in it for you, how to select a protégé, how to begin and end a mentoring relationship, how to structure the relationship, and what to consider when mentoring women and people of color. It examines the myths and issues behind each of these questions and provides specific strategies for effectively managing the mentoring process.

Continued p. 7, "Resources"

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The *WEEA Digest* is published by the WEEA Publishing Center, a project at Education Development Center, Inc., under contract #RP92136001 from the Office of Educational Research and Improvement. Opinions expressed herein do not necessarily reflect the position of the U.S. Department of Education and no official endorsement should be inferred.

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WOMEN'S
EDUCATIONAL
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DIGEST

Gender Equity in Vocational Education

By Debra J. Robbin, Ed.M.

Vocational education has historically been characterized by a high degree of sex segregation. Before Title IX of the Education Amendments in 1972 and the Vocational Education Act in 1976, access to nontraditional courses as well as to some vocational schools was legally denied to females. These barriers led male students to be concentrated in industrial and agricultural education and females in home economics and entry level clerical occupations.

The Carl Perkins Act gave equity work vital support . . . to eliminate sex-role stereotyping . . . and to promote enrollments in nontraditional career programs.

The passage of the Vocational Education Act in 1976 specifically addressed sex equity programming in vocational education.[1] Then in 1984, the Carl Perkins Act gave equity work vital support by providing funds for program development to eliminate sex-role stereotyping in vocational education and to promote enrollments in nontraditional career programs.[2]

Researchers have found that these early efforts to eliminate sex-role stereotyping were somewhat successful in raising initial awareness of the problem.[3] Female enrollments did increase. There was still, however, considerable lack of progress in the area of nontraditional enrollments.

From the "trenches"

In order to investigate if and how equity issues have shown themselves in vocational education, I went to a vocational school to interview students. The school I chose is a regional vocational technical high school, and is located in the New England region. A working class community, the area has suffered severe hardship from the economic recession, registering an unemployment rate the second highest in the nation. The school offers a range of programs, from appliance repair technology and carpentry to data processing and electronics.

There are currently 1,088 males (64 percent of the total) and 601 females (36 percent of the total) enrolled. Of this number, 41, or 2.4 percent of the students (all females), are considered to be in nontraditional shops, which is well below the national average (13 percent) of nontraditional student enrollment.[4] I studied 103 students ranging from ages 14 to 17—34 females (33 percent) and 69 males (67 percent).

The students speak

The students in this school generally agreed that their school environment is equitable in a number of areas—in teachers expecting the same achievement from males and females (75 percent agreed); in encouragement to enroll based on one's abilities and interests (72 percent); in equal encouragement to participate in athletic activities (75 percent); and in students' right to enroll in any shop in the school (92 percent). Fewer students thought that teachers treat males and females the same (55 percent). Finally, few students felt that their junior high school guidance counselor helped students consider a wide range of career choices, including nontraditional (22 percent). The gender differences on these questions were not statistically significant.

In terms of knowledge of or interest in nontraditional careers, there were both similarities and differences according to gender. While overall only 18 percent have a family member working in a nontraditional career, 56 percent know someone in a nontraditional career. However, 47 percent of the females and only 17 percent of the males were interested in learning more about a nontraditional career.

Next issue: Violence Against Women and Girls. If you would like additional copies of the *WEEA Digest*, to be added to our mailing list, or to receive our free catalog of gender-fair materials, call 800-225-3088.

August 1992
Education Development Center, Inc. (EDC)
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Gender equity . . . continued

In opinions about the "working world," there was general agreement among males and females that women work for the same reasons that men work (64 percent agreed). A large portion of the students felt that equal pay for equal work is not prevalent, showing they know at least one of the consequences of occupational segregation. Only 30 percent overall felt that men and women in the same job earn the same pay.

Despite the similarities in these results, there were striking gender differences in opinions about the roles of females and males in the workplace. While 64 percent of the students believed that sexual harassment is a serious problem for many working women, 82 percent of the females felt this way compared with 55 percent of the males. Thirty-six percent overall thought that only men should work on construction sites because they are stronger, but this broke down to only 12 percent of the females, compared with 48 percent of the males. And although 44 percent of the students felt that there are some jobs only men should do, only 21 percent of the females held this view compared with 55 percent of the males.

Although 44 percent of the students felt that there are some jobs only men should do, only 21 percent of the females held this view compared with 55 percent of the males.

While only 23 percent overall felt that women should not work when they have small children, 15 percent of the females felt this way, compared with 28 percent of the males.

Twenty-four percent of the males thought that more men should work in nursing, childcare, and clerical jobs, compared with 56 percent of the females (34 percent overall). Although only 21 percent considered men the primary breadwinners "so women don't need to earn as much," only 9 percent of the females thought this, compared with 28 percent of the males.

There was general agreement among males and females concerning career plans. Eighty-nine percent planned to have a career, with 77 percent planning to combine this with a family. Seventy-eight percent viewed their career as a way to use and develop their skills and 79 percent felt their families would support them in whatever career they chose. However, when asked if their family encouraged them to explore different career possibilities, 62 percent overall said they did— but only 52 percent of the males reported this support, compared with 82 percent of the females.

A broader picture

Although the students in this school felt it equitable in terms of expectations, enrollment, and encouragement in athletic activities, one must carefully weigh these perceptions with other evidence. We have numerous studies that have indicated considerable differences in the ways in which males and females are treated in schools.^{5}

I feel that the students are limited in their ability to make this assessment. Their youth, inexperience in critiquing their educational environment along gender lines, and lack of exposure to other models of vocational education are all factors that may have elicited these responses. Whether or not a student is in a nontraditional shop can also affect how these issues are perceived. In talking with the school's nontraditional support group—a group that meets weekly to share strategies and resources for increasing girls' participation in nontraditional careers—I heard views that expressed a somewhat different experience, especially in terms of achievement expectations.

There is tremendous societal pressure against men doing what are considered "feminine" jobs. That there is a sizeable majority of males in the school and none in nontraditional shops such as childcare, suggests subtle pressures not to violate the "norm." There was very mixed feeling among the students on whether men should even work in these areas. Often, in discussing nontraditional occupations, we place more emphasis on encouraging women rather than men, because these jobs pay better. But income is not the sole reason for advocating equity, and it is important to remember the benefits of promoting flexibility of sex-roles and reducing sex-role stereotyping on the whole.

I found that the female students feel strongly and positively that they have a significant role in the working world. They are not advocates of occupational segregation, despite many of them having chosen traditional shops in this school. This was, in some respects, a surprising finding for me. Although further study is needed to explain what motivates both males and females to attend a vocational high school, it may be that males and females have different reasons for obtaining the skills they are studying in vocational school. Without doubt, these students are aware that they are learning an employable skill.

Students generally felt that the hardest part of choosing to enroll in a nontraditional shop was the peer pressure one would have to endure. The most common comment was that other students would laugh. Though the nontraditional students I met did not mention this kind of treatment specifically, they did indicate that it was an isolating experience and that they did not feel generally accepted.

The issue of sexual harassment must also be dealt with. There were significant differences in whether males and females defined sexual harassment as a serious problem. In an open-ended question asking for "the best way to deal with sexual harassment," many students answered, "Tell someone" or "Report it." However, several males, but no females, answered with comments such as "leave the job," "avoid it," or "don't bother with it," indicating a stronger belief that harassment is easy to eliminate or that leaving one's job is an option for most women.

In conducting this project, I had the support, openness, and interest of the superintendent, the head of guidance counseling, the head of academic instruction, and the nontraditional guidance coun-

Continued p. 5, "Gender equity"

Vocational education in the school reform movement

By Sundra Flansburg, Center for Equity and Cultural Diversity

Reform agendas and strategies for improving education in the United States have not generally focused on vocational education as an integral part of the education picture. Many of the challenges vocational educators are grappling with, however, are very similar to those being faced by reformers looking at other areas of our education system.

The equity lens

The changing demographics of our citizenry are forcing us to examine how well our educational system serves those who are not white, middle-class males, as well as how changing work force needs should be addressed within schools. Vocational education in particular has seen two decades of legislative efforts designed to increase access and expand the definition of vocational education.

This article will highlight some of the equity issues being raised in the larger educational reform discussions and note some of the implications of these issues within vocational education. By examining some of these critical issues, we can begin to develop new approaches to vocational education that benefit all of our students.

Role of the teacher

For over two decades we have known that teachers, like the rest of us, have learned well the biases present in our dominant culture. This fact has been reaffirmed in *How Schools Shortchange Girls*, a recent study by the American Association of University Women.[1] Vocational teachers are subject to the same messages about who is most "able" and who has little promise.

Although most teachers don't consciously act on, or even hold, biases about students determined by their skin color or gender, students do pick up unconscious signals and perform according to teachers' expectations of them. Researchers Myra Sadker and David Sadker have found a hierarchy at work in the classroom, with white males receiving the most attention from teachers, and females of color receiving the least—this while the teachers studied felt they treated their students equitably.[2]

Tracking and ability grouping

Tracking of students by academic ability, although widely used across the United States, has been criticized by reformers and equity advocates alike. Although this issue is larger than this article, some major criticisms have been that students of color are disproportionately placed in the lower tracks. The criticism of racial segregation within tracking is supported by the fact that the practice of tracking students gained wide favor only after the 1954 desegregation order from the Supreme Court.[3]

Rather than helping students placed in lower tracks build skills, tracking relegates them to failure. In fact, the system does not improve performance of lower and average tracked students and only improves performance of higher tracked students by a small fraction, if any.[4]

While the standardized tests often used to separate students by "ability" are biased against females, males of color, and low-income students, these tests are one of the primary instruments used to determine tracking position.[5] This, coupled with unconscious bias in teacher perceptions, means that placement in tracks cannot be free from the biases and prejudices of the dominant culture.

It's clear that the answer to addressing students' needs lies not in more extensive tracking systems as some educators propose,[6] but in making our instruction equitable, accessible, and intellectually challenging to students with varying learning styles and abilities.

Although most teachers don't consciously act on, or even hold, biases about students determined by their skin color or gender, students do pick up unconscious signals.

"Special" students

Much of the recent legislation affecting vocational education has contained provisions for eliminating discrimination against certain populations of students, including females, low-income students, students with disabilities, and students of color. This legislation has been important for opening the doors for students not traditionally well served by vocational education, as it has been within the larger educational structure.

Much of the literature that focuses on vocational education and select populations looks at females and at students with disabilities. Research on females has highlighted a number of areas related to vocational education that require immediate and continuing attention, for example, sex-segregation of class enrollment, sex-biased assessments and counseling, and sexual harassment within the school.

Other research looks at students with mental and physical disabilities. This attention is partially the result of federal legislative requirements, as well as the fact that many students with disabilities are tracked into vocational education. Studies have shown that vocational training helps to ease the transition between school and work for disabled students.

But female students with disabilities face hurdles both because of their gender and because of their disabilities. A recent study by researcher Mary Wagner found that young women with disabilities do not receive either the same quality or quantity of vocational education as male students with disabilities. For example, vocational training for female students with disabilities falls mainly in the low-paying service sectors, like food service and office work, while that for male students with disabilities falls mainly in skilled professions, like construction. This segregation may lock females with disabilities into a cycle of poverty and dependence.[7]

Finally, recent studies have shown that students who speak languages other than English are increasing in number within the vocational education system, although these students are still underrepresented. The Carl Perkins Act stipulates that vocational schools must actively recruit, counsel, assess, and provide support services for students who have little or no English. While many new approaches are now being tested to meet this legislative requirement, many schools are still not in compliance.[8]

While schools may still be working as if large groups of students are "special" students, they are, in fact, the majority of students in our schools. As we move to ensure that instruction, services, and benefits are equally available and accessed by all groups of students, we will need no longer consider so many as "special."

Counseling and assessment

Interest and skill assessment is part of every student's entry into vocational school. And, although it is now illegal to use assessment materials that differ by gender, a practice which was popular prior to Title IX and the Vocational Education Act of 1976,[9] assessment still depends on the assessor's interpretation of data and on the student's interests.

Although on the surface students are . . . selecting the areas they are interested in, we must remember they do not operate in a vacuum.

In terms of counseling, research has shown that, compared to adolescent males, adolescent females were aware of many fewer occupations open to them, and they had lower expectations for their probability of succeeding in them.[10] We must work very hard to ensure that all students are aware of the possibilities open to them and that it is students' abilities and interests that decide their course of study, rather than biases of the school and society. One of the ten policy recommendations in a report by the National Center for Research in Vocational Education is that "school counselors must . . . '[lean] over backward' to avoid being influenced by stereotypes that pervade the entire culture when they offer educational and labor market advice to young women of all racial and ethnic backgrounds."[11]

Student self-segregation

Although schools no longer have different requirements based on gender or race, vocational education remains one of the most segregated areas of education. Females make up more than 90 percent of the students in programs for training in cosmetology and in secretarial and nursing assistant training. Males make up over 90 percent of the students in electrical technology, electronics, appliance repair, auto mechanics, carpentry, welding, and small engine repair. This division concentrates females in training for fields with low pay, while males are in courses with more high-paying job opportunities.[12]

There is also a substantial difference when transferability and career ladders are examined. One of the discussions currently taking place within vocational education concerns the question of whether vocational instruction should be training students for a specific job, or in broader job skills that are more readily transferable. This issue takes on particular significance when considered in terms of the segregation now in place. A student trained in electronics has more chance for transferring skills to another job, as well as advancement in the workplace, than someone who is trained in cosmetology.

Although on the surface students are, for the most part, selecting the areas they are interested in, we must remember they do not operate in a vacuum. The reasons females tend to select female-dominated courses span the range from wanting to be with their friends to experiencing sexual harassment when trying nontraditional classes.

Another key reason is lack of female teachers as role models for young women. As with students, female instructors are concentrated in traditionally female job areas, while making up less than 10 percent of all the teachers in industrial arts, agriculture, trade and industry, and technical occupations. And teachers of color are significantly underrepresented among vocational school faculty.[13] While the lack of role models for students of color overall, and for females in nontraditional courses, does not automatically exclude them, many students feel more enthusiasm for trying something new when they see "someone like me" as a classroom leader.

Educators concerned with the gender distribution among courses have found that by talking to girls realistically about job opportunities, advancement, and salaries, girls become much more interested in exploring nontraditional areas. At the same time, however, we need to create supportive, accepting behavior on the part of male students. Without focusing on this, many classrooms may remain unfriendly to female students.

Making vocational education equitable

Educational administrators and teachers can do much to change the inequities that now exist. Training programs that have proven effectiveness are already available to help change this pattern (GESA—Gender/Ethnic Expectations and Student Achievement—is but one).[14]

Vocational education is entering a challenging and exciting period, when big questions are being asked, and new approaches proposed. As vocational educators discuss and evaluate the directions to go—looking at issues such as the relationship they have with traditional schools, whether or not students should be encouraged to mix vocational and academic courses, how to prepare and support teachers—the equity issue must remain central to the discussion.

School reform movement . . . continued

Notes

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[3] Kenneth J. Meier, Joseph Stewart, Jr., and Robert E. England, *Race, Class, and Education: The Politics of Second-Generation Discrimination* (Madison, Wis.: The University of Wisconsin Press, 1989), 24.

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[5] Patricia B. Campbell, *The Hidden Discriminator: Sex and Race Bias in Educational Research* (Newton, Mass.: WEEA Publishing Center/EDC, 1989), 13–14.

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[13] National Center for Education Statistics, "Sex and Racial/Ethnic Characteristics of Full-Time Vocational Education Instructional Staff, Report no. NCES-82-207B (Washington, D.C.: U.S. Dept. of Health and Human Services, 1982), cited in Wellesley College, 43.

[14] GrayMill Consulting, Rt. 1, Box 45, Earlham, IA 50072; 515-834-2431.

Gender equity . . . continued from p. 2

selor. They have also decided to have their first inservice on these issues. It is my hope that their interest will continue and expand.

The road ahead

Despite the fact that women workers make up 45 percent of the U.S. labor force, more than three-quarters of them are employed in traditionally female-dominated occupations.[6] Our vocational schools begin to model this early.

This investigation provided useful information on students' perceptions of their environment and their choices. Much of the significant results, and where much research is still to be done, lie in those responses that showed substantial gender differences.

Rebecca Douglass has cited the lack of research in vocational education as a major obstacle to developing quality educational strategies. She has also pointed to the need to look beyond legal compliance when working to improve vocational education.[7] With supporting legislation now in place, educators must continue to move programs toward their potential of promoting positive and empowering role models for both females and males.

Female students feel strongly and positively that they have a significant role in the working world. They are not advocates of occupational segregation, despite many of them having chosen traditional shops.

A graduate of the masters program at the Harvard Graduate School of Education, Debra J. Robbin has been active in women's issues for the past 15 years.

Notes

[1] American Association of University Women, *Vocational Education: Equity in the Making?* (Washington, D.C.: American Association of University Women, 1988), 2.

[2] American Association of University Women.

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[7] Douglass.

Shaping a new decade: Women in construction

By Susan Eisenberg, Tradeswomen Research and Education Project

The following article gives one woman's perspective on nontraditional occupations. It offers vocational educators an important view of life after vocational school.

I remember the first time I heard my business agent refer to us as "Pioneers of the Industry." It was ten years ago, when I was a third-year apprentice electrician. It made me feel incredibly affirmed and claimed, as though, finally, our presence was accepted. As a phrase that's still being used for women entering the construction trades in the 1990s, though, "pioneer" has an uncomfortable tone. By its nature, pioneering is meant to be transitional, a role one moves on from.

National affirmative action guidelines opened the building trades to women in 1978. If we look at the definition of *pioneer*—"those who clear and prepare the way for the main body"—after 12 years we have to say that the "main body" has yet to arrive, much less be heard coming down the road.

Let's take a leap and claim this new decade as a time to put pioneering behind us. We have cleared and recleared the same land enough times. Women entering the trades today need to be seen as *settlers*.

Let's take a look for a moment at the early history and where we expected to be by now. This is important because a lot of explaining and justifying is going on, since things didn't happen according to plan.

For each woman currently in the trade, three other women belong here as well—not by feminist fantasy, but by federal regulation.

Statistics, compliance, goals

In April 1978, in response to lawsuits filed by tradeswomen in Washington, D.C., within a climate created by a strong women's movement, Jimmy Carter extended Executive Order 11246 of the Office of Federal Contract Compliance Programs to set national job goals for women on federally funded construction projects over $10,000. These standards were progressive, increasing every year, so that by 1981, 6.9 percent of the workers on these job sites were to be female. These goals were meant as *beginning figures*, as a way to open up the industry with a wedge where the federal government could exert pressure. That support was pivotal and is something we must fight to keep or institute. Most important, Title 29 of the Apprenticeship Regulations of 1978 stipulated that apprenticeship slots were to be filled by women in numbers equal to half their representation in the local labor force, or that approximately one-quarter of every class be female.

Let's stop and do a little math, and we'll appreciate how important training program statistics are. Imagine that for the past 12 years the federal regulations had been effectively monitored. If 25 percent of the apprentices since 1978 had been women (and if we assume a 30-year rotation of the industry work force) then today there would already be over 8 percent of women in every trade nationally, with the assurance that, in twenty more years, women would make up 25 percent of the trades.

Instead of 25 percent, only 3.8 percent of the apprentices since 1978 have been female, so that after 12 years, women make up less than 2 percent of the industry work force. Proceeding at this pace, in 20 more years—after 30 years of "clearing and preparing the way"—we would reach 4 percent nationally. We would never reach a critical mass, the size of settlement that can sustain organization and become comfortable. It's not hard to figure out that without the tradeswomen population growing to an acceptably significant size, organizational work cannot be sustained, isolation increases, and aging pioneers begin to look for more comfortable surroundings.

Temporary isolation, longtime frustration

We entered the industry in 1978 with the reasonable expectation that our isolation was temporary. For each woman currently in the trade, three other women belong here as well—not by feminist fantasy, but by federal regulation. What a different—and more appropriate—discussion we could be having now if 8 percent of the trained work force were already women, and we were on a clear path moving forward.

Population forecasters are estimating that only 10 percent of *new* U.S. workers in the year 2000 will be white males. By power of numbers, of who will make up the working population—larger numbers of minorities, of immigrants, or women working outside the home—it is predicted that the construction industry will be drastically changed in composition by gender and race within a decade.

How do we reconcile these two opposite predictions? This is where ideology and history play a crucial role. On the one hand, I have said that, continuing at the present rate, women will only achieve 2 or 3 percent by 2000. On the other hand, I stated that, no matter how much we are opposed, women will be entering the industry in significant numbers by 2000. The entrance of women into the work force can occur in one of two ways. Either we unlock this stalling on women's entry into skilled and higher paid positions in the trades and really integrate the work force, which means not just in numbers, but in a more inclusive work environment, or we follow the other plan, introducing a lot of hierarchies into the work, segregating it internally, with women and other workers of color in the least organized, least skilled, least safe, lower-paid end. We have to make sure that doesn't happen.

Continued p. 8, "Shaping a new decade"

Based on an article that appeared in *Radical America* (Alternative Education Project, 1 Summer Street, Somerville, MA 02143).

Open nontraditional doors with WEEA publications

Vocational education can use the products of the Women's Educational Equity Act (WEEA) Publishing Center to create equitable education and offer innovative career options for women and girls interested in nontraditional fields. Developed with funds from the WEEA Program, the materials may be purchased by mail or phone. Orders under $25 must be prepaid. For prepaid orders, add $2 shipping for orders under $25; add $4 for orders $25 and over. For a complete listing of our materials contact the WEEA Publishing Center at 800-225-3088 (in Massachusetts call 617-969-7100).

Chart Your Course and **Building Partnerships** (set), #2703 $16.00
High-tech industry/educational equity model uses the actual workplace and career counseling to encourage women to enter and succeed in nontraditional education and career choices.

It's Her Future, #2645 purchase $43.00 #2647 rental $7.00; #2115 booklet, packet of 20 $23.00
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Spatial skills are highly correlated with success in technical and professional occupations. The exercises here show how perceptual and visualization skills apply in real world math, geography, acoustics, landscape architecture, and telecommunications.

Steppin' Up and Moving On: A Career Education Program for the Urban, Noncollege-bound Student, #2435 $7.50
A comprehensive curriculum with a range of creative and varied activities such as vocational interest assessments, resumé analyses, and career game exercises, to expand the career options of urban students of color, especially females who are not college-bound.

Don't Go to Your Room . . . And Other Affirmations of Empowerment for Women with Disabilities, captioned #2728 purchase $63.00 #2729 rental $10.00
noncaptioned #2730 purchase $63.00 #2731 rental $10.00
This 60-minute video introduces disabled students and their teachers to a wide range of careers. A dozen women discuss the myths about people with disabilities; experiences with bias, stereotyping, and the manifestations of these myths; and ways to confront and dispel these problems.

Options: A Career Development Curriculum for Rural High School Students, Understanding People in Our Area, #2128 $14.25; **Decision Making,** #2129 $9.50; **The Juggling Act: Lives and Careers,** #2131 $19.75
Role-playing, case studies, classroom discussions, and activities help young rural students understand themselves better and use their understanding to make crucial decisions about work, marriage, family, and other aspects of their future.

Fair Play: Developing Self-Concept and Decision-Making Skills in the Middle School (12 books), #2498 $141.25
An innovative interdisciplinary approach that links career exploration and academic skill building. These units concentrate on communicating effectively, getting along with others, solving problems, and making decisions.

Hand in Hand: Mentoring Young Women, Guide for Planning, Implementing, and Evaluating a Mentoring Program, #2685 $17.50; **Ideabook for Mentors,** #2686 $8.50; **Student Career Journal,** #2742 $6.00
Guide for Planning, Implementing, and Evaluating a Mentoring Program provides guidelines for setting up the program and establishing an active partnership between schools and businesses. *Ideabook for Mentors* contains the basics for workshop activities, as well as guidance for mentors and students. A *Student Career Journal* helps students record insights as they learn about themselves.

ASPIRE: Awareness of Sexual Prejudice Is the Responsibility of Educators (set), #2245 $27.00
An excellent curriculum for training teachers and future teachers to evaluate instructional materials, examine the effects of sex-role stereotyping on careers, and develop strategies for change.

Choosing Occupations and Life Roles (set), #2516 $45.00
A four-volume guide for teachers and counselors combats stereotyped thinking about career selection and helps stimulate informed, unbiased choices.

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WEEA Working Papers present in-depth discussions on cutting-edge issues in gender equity:
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Shaping a new decade . . . continued

I think we'll find that all explanations both of women's historical absence in the trades and the current low percentages break down into four basic arguments: (1) women are not able to do the work; (2) women just don't seem interested in making $25/hour; (3) women haven't been allowed to enter or consider entering the occupations; or (4) women shouldn't be allowed to do this work which belongs by right to men. The first explanations quickly fold into the last. Ultimately, either one believes that women have a right to be here and have been unfairly kept out, or one believes that women don't have a right to be here and should be kept out.

A gauge for our success as settlers will be not whether women who are extraordinary can enter the building trades, but whether it has become a reasonable option for any woman to consider.

From "Rosie" to today's worker

Looking back to the 1940s can give us a sense of the roots of opposition to women's integration into the trades. Relying on women's labor to keep the industrial war effort going during World War II, the government was forced to admit and propagandize women's ability and desire to do nontraditional work. What the government refused to acknowledge was women's *right* to that work. Women were supposedly holding jobs for returning soldiers. More than 30 years after trained, skilled women were fired from their nontraditional jobs, affirmative action guidelines violated traditional ideology that reserves first choice of jobs to white males and said that women belonged there, not to save someone else's place, but to finally fill their own place at a job with decent pay and benefits.

When six female apprentices entered my union local of 2,500 members in 1978, there was enormous agitation, comments like, "The women are taking over!" as though the six of us were a full-scale invasion force. At the time, I found the hysteria bizarre, but now I think that in some ways it reflects the depth, though certainly not the goals, of what was at stake.

We are a movement that by its very nature confronts the gender division in our personal as well as economic lives. I remember a carpenter on one of my first jobs saying, "You know why guys don't want you here? Every day they go home, they tell their wife how hard they worked, then they sit down while she fixes dinner. They've got a good thing going. What's she going to think when she finds out a girl can do his job?" And, taking it one step further, if she herself could have an earning power equal to his, would she still choose the relationship at all?

Tradeswomen issues fall at the fulcrum of the contemporary feminist movement. This is why, I believe, the opposition has been so determined, and why it is important for blue-collar affirmative action to be part of any progressive agenda for women or labor. We are a movement that unifies issues of class, gender, race, and sexual preference as our only path of growth. A gauge for our success as settlers will be not whether women who are extraordinary can enter the building trades, but whether it has become a reasonable option for *any woman* to consider.

Let's admit that we've gotten stuck, we've been out-maneuvered, and we may have to get ornery again and give up some of the comfort we've achieved if we're going to regain the initiative. As settlers, we'll all need to be analytical thinkers. Anyone who can figure out the most efficient way to run pipe and how best to support it, who can figure out how to get something that weighs ten times their own weight up in the air and down safely, is an analytical thinker. We need to envision the kind of settlement we would feel comfortable in, where *we* feel as comfortable and at home as the most accepted person does on the jobs we're on now.

Women's Educational Equity Act Publishing Center
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WOMEN'S
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Beyond Equal Access

Gender Equity in Learning with Computers

By June Mark, Center for Learning, Teaching, and Technology, EDC

As we approach the year 2000, computers are becoming commonplace tools in our workplaces, schools, and homes, changing the ways in which we work, learn, and communicate with one another. According to U.S. Department of Labor predictions, by the year 1995 at least two million people will be employed in occupations directly related to computers, and millions of others will use computers as a routine part of their jobs.[1] Computer-related occupations are expected to grow 5 percent per year in the 1990s.[2] Computers have, for both good and bad, transformed the nature and environment of work. Since women are a growing segment of the U.S. labor force, making up almost two-thirds of the new entrants into the work force between 1987 and 2000,[3] computers have and will continue to have a substantial impact on women's lives.

> *Lack of access holds implications for future educational opportunities as well as career options and choices.*

Because developing familiarity and facility with computers is an important educational goal for *all* students, schools need to ensure equity in computer access, use, and outcomes. However, numerous studies have examined and documented inequities, especially with respect to girls and young women. Given that the presence of computers in our schools and workplaces is likely to increase, there is a need to understand why inequities in computer use exist and to develop effective strategies to ensure equal opportunities and equitable consequences for all students in interactions with computers. This article focuses on gender equity in learning with computers and includes a review of relevant research and practice.

One caution: while we know that social class and racial/ethnic inequities exist with regard to computer access and educational outcomes, studies that consider race/ethnicity, gender, and class simultaneously are few. For a true picture of gender issues with regard to computers—one that acknowledges the many differences among females, we need to know more about all of these issues.

Gender differences in school computer access, use, and interest

There are many factors—psychological, social, attitudinal, and environmental—that contribute to the existing conditions. These issues are of concern not simply because girls and young women have less access, but because lack of access holds implications for future educational opportunities as well as career options and choices.

Gender differences have been documented in both computer use and access; girls are more likely to use computers for word processing, while boys are more often programming computers. Boys have significantly more positive attitudes toward computers than girls, finding computers more "enjoyable," "special," "important," and "friendly" than girls do.[4]

A computer gender gap usually starts becoming noticeable at the middle school level and widens as girls get older.[5] Gender differences are more evident in advanced classes than in introductory courses.[6] Girls tend to have less confidence in their own use of computers, and both boys and girls perceive computers as predominantly in the domain of males. These attitudes contribute to lower enrollments in computer courses and in varying levels of interest.

Computer use in informal settings

In voluntary, out-of-school uses of computers,

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June 1992

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Beyond equal access. . . continued

even greater gender differences have been found. Boys are more likely than girls to have access to and use a computer in their home, in a friend's home, or in a computer camp.[7] Miura and Hess found that boys are roughly three times as likely to enroll in computer camps and summer classes, with variations increasing with grade level, cost of program, and difficulty level of course.[8] In another study of students who had not yet received computer instruction in school, over 60 percent of boys had a computer at home compared to 18 percent of girls, and 28 percent of girls versus 64 percent of boys reported knowing how to work with computers.[9]

Students are more likely to be engaged and motivated in using the computer if they see it as an important tool for accomplishing their own goals.

Effects of experience on attitudes

Several researchers have found a relationship between positive experience with computers and future interest in and facility with computers. Loyd and Gressard found that students' attitudes toward computers are significantly affected by computer experience, and that differential computer experience accounts for differences in attitudes more so than gender does.[10] In one study, researchers found that experience with computers reduces the attitude differences regarding boys' versus girls' abilities with computers, and, therefore, reduces the prevalence of sex stereotypes among boys and girls.[11] Questions regarding the types and effects of experience with computers, especially on continued interest in working with computers and on attitudes, deserve further investigation.

Computers associated with math and science

There have been widespread data collected about gender bias in student learning of mathematics and science,[12] and there is concern that these inequities will be mirrored in the use of computers in education. Because computers are so often linked with mathematics and science, long considered male domains, how computers are being used in teaching and learning may have serious consequences for the learning opportunities of girls. Especially in secondary schools, computers are more often clustered in math and science departments. And apart from the fact that girls at present are less inclined to be interested in math and science activities than boys are, the fact that teachers in these areas are predominantly male significantly reduces the opportunity for girls to have female role models who use computers.

Learning context

Computers are versatile tools, suitable for a range of activities in schools from music to mathematics, including design, problem solving, writing, and planning. Linn hypothesizes that both the function for which the computer is used and the organization of the learning setting affect the engagement of girls and boys with the technology.[13] Fewer gender differences are reported when computers are used for computer-assisted instruction, games, simulations, or word processing. Some researchers have found that boys are more interested in competitive games such as the software in video arcades while girls are more interested in the computer when they are working with word games, logic puzzles, art, music, "story" programs, and adventure games.[14] Because many students develop their impressions about computers in schools, it is important that the computer tasks and the software meet the learning needs of students and represent uses of technology that emphasize the strengths of computers to solve problems, aid in decision making, and achieve goals that are important and relevant to students. Computers are not inherently biased, yet in the contexts they are used they can often take on characteristics that reinforce gender bias.[15]

Given that learning experiences and context influence students' computer use, and perceptions about computers, what are some effective strategies that incorporate these ideas into actions for promoting equity in the use of computers?

Designing equitable learning contexts: software and related materials

As more and more computer software specifically designed for varied educational purposes becomes available, teachers and students will have a greater range of options, and software can be selected to more closely match individual student needs. Students are more likely to be engaged and motivated in using the computer if they see it as an important tool for accomplishing their own goals.

One method to illustrate computers' usefulness in problem solving and relevance to many activities and subjects, is for teachers to develop specific computer design or research projects for their students. These types of projects get students actively involved in learning, let them have fun, and have them using computers as an integral part of their work in a number of different ways (for example, design and drawing, model building, measurement and calculation, word processing).

Designing equitable classroom organization and interactions

One particular teaching strategy that appears effective in engaging females in the use of computers is structuring collaborative learning experiences. This is consistent with evidence that it is not only what software is used in classrooms, but how it is used, that impacts student engagement with computers. There is some indication that collaboration may be a preferred work context for girls.[16] Software games in which children were required to play cooperatively appealed more to girls,[17] as did teacher-structured collaborative activities.

Teachers can also involve students in discussion about the equity issues in using technology.

Continued p. 6, "Beyond equal access"

Multicultural education as democratic education

By Katherine Hanson, Associate Director, Center for Equity and Cultural Diversity

As this nation nears the end of the century, we are acknowledging a world very different from that perceived of as the "good old days."[1] Too often the discussion revolves around the statistics of color—"By the year 2000, one out of three Americans will be a member of a racial minority"[2]—rather than around the issue of how we can most effectively educate the majority of our students. In the years ahead, our education system must begin to address those structural changes through which we can empower our students. We must ask, "why is this diversity so often viewed as a problem to be solved? Why isn't it a wonderful opportunity to build a new, more diverse, and much more interesting society for all of us to live in? Well-meaning as it is, some of the calls to deal with diversity in the classroom sound too much like the Public Health Officer warning us that the measles are coming."[3]

We have always been a nation of diversity. Historically, large segments of the South have had African American majorities, the Southwest has been predominantly Latino, and in other states American Indians/Alaska Natives have been the majority in certain areas. Until fairly recently, however, different cultures and people have remained separate. Now we are living together in a changing cultural pattern that can either create tension or provide for a synergetic renewal of our nation's energy.

As a democratic nation we have provided the model for other countries to follow. Now we, too, must reexamine how to continue to open the democratic process to all people—how do we create a multiracial/multiethnic democracy? And what role does education play in this process? The task now facing us is how to develop models for education that is truly multicultural, truly democratic. Multicultural education may be at the core of this move toward education for democracy, for " . . . if democracy was meant for slaves and descendents of slaves, for women as well as men, for recent immigrants as well as those here for generations, if indeed a democracy which includes all of the nation's people is to be fostered in this country and modeled in this nation's educational system, then the issue of multicultural education must be at the heart, and not on the margins, of all discussions about education."[4]

Democracy can best be developed through multicultural education that respects the individual, enables all students to see themselves in the curriculum, and fosters a deep understanding and acceptance of differences as legitimate and empowering. Multicultural education can then be the way to move beyond the separations that exist to a new culture. As one principal, concerned with reducing the levels of street violence stated, "I used to say multicultural education was the right thing to do; now I know it's the only thing to do. If our schools can teach students to respect one another, can give them the experience of living together peacefully, then we'll have fewer lives lost."[5]

Multicultural education is not a panacea for all educational or social problems, but it does offer significant hope for change. Multicultural education, within the context of education for democracy, is not merely a lesson in human relations or an interesting "add-on." Rather, as defined by a range of educators and researchers (Banks, Sleeter, Sleeter and Grant, Cummins), multicultural education is a *process* of systemwide reform and restructuring that includes all facets of education. Focusing on the structures of schools and their role in educating for democracy, Sonia Nieto's definition of multicultural education is instructive: "Multicultural education is a process of comprehensive school reform and basic education for all students. It challenges and rejects racism and other forms of discrimination in schools and society and accepts and affirms the pluralism . . . that students, their communities, and teachers represent. Multicultural education permeates the curriculum and instructional strategies used in schools, as well as the interactions among teachers, students, and parents, and the very way that schools conceptualize the nature of teaching and learning. Because it uses critical pedagogy as its underlying philosophy and focuses on knowledge, reflection, and action (praxis) as the basis for social change, multicultural education furthers the democratic principles of social justice."[6]

"Some of the calls to deal with diversity in the classroom sound too much like the Public Health Officer warning us that the measles are coming."

Multicultural education becomes the way in which educational restructuring can best model education for democracy. Because multicultural education is a process, it is often misunderstood by those seeking a program to add on to what they are already doing. In her discussion of this phenomenon, Christine Sleeter cautions that individuals "usually build [multicultural education] around many taken-for-granted ideas that White Americans have about race. In the process, what gets done may not really change anything, but gives the illusion of doing so. . . . [E]ssentially, multicultural education . . . is about challenging oppression."[7] With democracy at its core, multicultural education can help schools examine how we have fostered separations and provide guidance to reduce those separations. As a process, multicultural education enables us to examine our own attitudes and beliefs about diversity and to examine those structures within our organizations that inhibit or promote a multicultural environment. This process then leads to the development of a new culture within schools.

Multicultural education. . . continued

Reciprocal acculturation is an important aspect in the development of our approaches to multicultural education.

Schools, as democratic institutions, have struggled to define what this new culture of diversity looks like. Cox and Blake define the features of a multicultural organization as pluralism—reciprocal acculturation—where all groups respect, value, and learn from one another; full structural integration of all groups so they are well represented at all levels of the organization; full integration of minority culture-group members, women, and others in the informal networks of the organization; an absence of prejudice and discrimination; equal identification of minority and majority group members with the goals of the organization and with opportunity for alignment of organization and personal career goal achievement; a minimum of inter-group conflict based on race, gender, nationality, language, sexual preference, and other identity groups of organization members.[8]

A key point here is the reciprocal acculturation of all groups. Schools can take a lesson in this regard from corporations that see heterogeneity as promoting creativity and innovation, which together with organizational coherence and unity raise the quality of decision making and productivity. This point of reciprocal acculturation is an important aspect in the development of our approaches to multicultural education, for it enables schools to build a new, inclusive, democratic culture rather than continue to address the needs of large segments of the student population as if they were somehow outside the norm.

The Center for Equity and Cultural Diversity has developed an interdisciplinary framework for examining pluralism. This framework explores the balance between the individual and the institution in creating a democratic, pluralistic culture. Once individuals understand their own attitudes and behaviors—within the context of their socialization—they can then begin to examine how these and similar issues play out within the larger organization. There is an interplay or tension between the individual and the community, whether that community is defined as the school system, the corporation, or the city. Without an understanding of this symbiotic role, no significant long-term changes can occur. Thus, in order to create the democratic society we envision, we must explore our own belief systems and discover how they affect the institutions in which we find ourselves. At the same time, we must acknowledge that institutional values will also affect both our perceptions of the world and our individual behaviors.

Jerome Bruner, in his most recent book, *Acts of Meaning*, emphasizes that meaning-making emerges from social interactions mediated by culturally constructed narratives. This meaning-making is the construction of an individual's logic through interaction with others.[9] The work of the Center for Equity and Cultural Diversity continues to focus on this point—how we make meaning of our lives and how we can develop education that ". . . leads our students, our graduates, and ourselves as educators, to reject mindlessness in any form, to demand—for ourselves and our students—the alert, critical, engaged consciousness which can only come from thinking minds in dialogue with—and ultimately in community with—people who bring different stories, and tell different tales, so that something truly new can emerge."[10]

The Center for Equity and Cultural Diversity seeks to work with educators struggling to define the philosophy and practical applications of multicultural education as education for democracy. In this process, we hope to create the space, as Maxine Greene describes, "for expression, for freedom . . . a public space . . . where living persons can come together in speech and action, each one free to articulate a distinctive perspective, all of them granted equal worth. It must be a space of dialogue, a space where a web of relationships can be woven, and where a common world can be brought into being and continually renewed."[11]

For more information on the full range of activities of the Center for Equity and Cultural Diversity, contact Vivian Guilfoy, director, at 617-969-7100.

Notes

[1] I wish to thank James Fraser of Lesley College for his construction of education for democracy in a multicultural context on which I have built this discussion.

[2] *A Nation Prepared: Teachers for the 21st Century: The Report of the Task Force on Teaching as a Profession* (New York: Carnegie Forum on Education and the Economy, 1986), 79.

[3] James W. Fraser, "Transforming Academic Institutions: Multicultural Education," keynote address at Salem State College, Salem, Mass. (September 4, 1991). For a fuller analysis of the centrality of multicultural education in a democratic society, see Theresa Perry and James W. Fraser, *Freedom's Plow: Schools as Multiracial, Multiethnic Democracies* (New York: Routledge, forthcoming).

[4] Fraser, keynote address.

[5] Comment by panelist at CECD training conference "Valuing Diversity in Schools" in Indianapolis, Indiana, February 1992.

[6] Sonia Nieto, *Affirming Diversity: The Sociopolitical Context of Multicultural Education* (New York: Longman, 1992), 208.

[7] Christine Sleeter, "Multicultural Education as a Process, Not a Program" in Susan Gould, Tom LoGuidice, and Christine Sleeter, *Strategic Planning for Multicultural Education*. Working manuscript. For a full discussion of Sleeter's work, see Christine Sleeter, *Empowerment Through Multicultural Education* (Albany, New York: State University of New York Press, 1991).

[8] Taylor H. Cox and Stacy Blake, "Managing Cultural Diversity: Implications for Organizational Competitiveness," *Academy of Management Executives* 5, no. 3 (1991): 52.

[9] Jerome Bruner, *Acts of Meaning* (Cambridge, Mass.: Harvard University Press, 1990).

[10] Fraser, keynote address.

[11] Maxine Greene, "Excellence, Meanings, and Multiplicity," *Teachers College Record* 86, no. 2 (Winter 1984): 296.

WEEA computer equity materials . . . continued

In addition, AIR, in conjunction with Big Brothers/Big Sisters of America, Inc., developed a pilot project called SISCOM that pairs children and their big sisters or brothers in a co-learning approach. SISCOM uses fun activities and games to expose little and big brother and sister matches to different uses for computers, to help them develop problem-solving skills, and to give them practice in using a variety of educational software programs.

WEEA publications

Add-Ventures for Girls: Building Math Confidence combines teacher development with strategies that work in teaching mathematics to girls and includes a chapter on computer equity issues. The chapter outlines the bias against girls in computer education and gives a list of questions for schools or specific teachers to assess the computer learning climate for girls at their school. It also offers strategies for making computer education more accessible to girls by making sure software is interesting for girls, by encouraging parent support, developing computer clubs, and ensuring that girls get as much time on the computer as boys.

The Sky's the Limit in Math-Related Careers educates high school students about careers in math and science. Women working in computer science, engineering, and other math-related fields offer lively anecdotes, viewpoints, and inside information about their careers. *The Sky's the Limit* offers a chapter that details various types of careers in the field of computers.

Other projects of interest

Pathways for Women in the Sciences at Wellesley College Center for Research on Women is researching the barriers that prevent women from entering and remaining in scientific careers and the factors that would support a culture of success for creating women scientists. At the end of the study, "The Wellesley Report" will be issued and will serve as the basis for a conference to share findings with higher education, business, government, and private foundations.

The corporate-funded Computer Equity Expert Project at the Women's Action Alliance aims to reduce girls' computer avoidance. Two hundred educational trainers—specialists in computer education, gender equity, mathematics and/or science—attended six-day seminars where they acquired a feminist analysis of math and science, received instruction in gender equity in education, in girls and women in mathematics and science, in educational technology, and honed their training skills. The Computer Equity Expert Project has also established the Computer Equity Electronic Network and publishes a newsletter, *Computer Equity News*.

Listed below are the products and projects mentioned in this article. The WEEA Publishing Center materials may be purchased by mailing a check or money order for the amount of the order (plus $2 shipping for orders under $25; $4 for orders $25 and over) to the WEEA Publishing Center. To order by phone, using MasterCard, Visa, or purchase orders over $25, or for information on additional resources available through the WEEA Publishing Center, call 800-225-3088 (in Massachusetts call 617-969-7100).

WEEA products

Add-Ventures for Girls: Building Math Confidence, #2709 elementary $25.00; #2710 middle school $28.00

The Sky's the Limit in Math-Related Careers, #2237 $6.75

WEEA-funded projects

Mathematics, Science, and Computer Careers for Rural Women: A Model for Educational Equity
Dr. Tim Alford
Enterprise State Junior College
P.O. Box 1300, Enterprise, AL 36331
(205)347-2623

Collegiate Science and Technology Entry Program
Stuart Weinberg
CSTEP
Onondaga Community College
Route 173, Syracuse, NY 13215
(315)469-2475

The Neuter Computer: Computers for Girls and Boys
Women's Action Alliance, Inc.
370 Lexington Avenue, Suite 603
New York, NY 10017
(212)532-8330

Debugging the Program: Computer Equity Strategies for the Classroom Teacher
The Project on Equal Education Rights (PEER)
NOW Legal Defense and Education Fund
99 Hudson Street, New York, NY 10013
(212)925-6635

IDEAS for Equitable Computer Learning
SISCOM (Co-learning Computer Instructional Models)
American Institutes for Research
Center for Educational Equity
Box 1113, Palo Alto, CA 94302
(415)493-3550

Other projects

Pathways for Women in the Sciences
The Pathways Project
Center for Research on Women
Wellesley College, Wellesley, MA 02181-8529
(617)235-0320

The Computer Equity Expert Project
Women's Action Alliance
370 Lexington Avenue, Suite 603
New York, NY 10017
(212)532-8330

As an introduction, teachers can share research on computer equity with students, asking students what they think about the issues, discussing any questions they may have, and any issues that students feel don't make sense to them or that they don't understand. Teachers and/or students may be interested in doing their own research projects to analyze equity in computer use, access, and classroom interactions in their school. This can get students involved in understanding the issues and in educating others throughout the school.

Staff development

Changes in attitudes and practice do not happen overnight. They require time, good ideas and examples, resources, and support in order for teachers to effectively integrate computers into their curricula. Teacher training and development focused on gender equity and on integrating and ensuring equity in all learning activities is an important component to ensuring change and equity. Action research, an innovative teacher professional development model, involves teachers in designing and planning classroom research projects and reflecting upon the findings and implications with the support of colleagues. It creates grounded knowledge and understanding for teachers and the impetus to improve their teaching and learning.[18]

It is important for schools to go beyond equal access . . . by providing targeted opportunities to encourage girls.

Many teachers also need additional computer training themselves, to become comfortable with using computers and to develop ideas for integrating computers into what they are currently teaching. Collegial support will help to reduce some teachers' anxiety about using computers and to ensure equitable implementation.

Infusing equity schoolwide

It is important for schools to go beyond equal access in attempting to balance differences in exposure by providing targeted opportunities to encourage girls to be more involved with and persist in using computers. Girls should be educated and encouraged that mathematics and science are important and relevant to their lives. Mathematics and science teachers as well as guidance counselors can play a role in suggesting education and employment opportunities in technology-related fields. It is also important to develop partnerships between computer equity programs and organizations outside of the school, investigating and developing links with effective out-of-school programs such as Girls, Inc.'s Operation SMART™. Providing opportunities for students to support each other's efforts and to share their experiences, ideas, and resources helps, too. Partnerships with local business and industry can serve as resources for community involvement in schools, provide opportunities for students to interact with role models, and, perhaps provide some funding for innovative programs.

Principals, superintendents, and other school personnel should also be involved in promoting computer equity. Some ways to accomplish this goal include involving teachers and other school personnel, particularly females, in planning computer use as well as in the acquisition of computer hardware, software, and curriculum materials. King found that participation in planning activities resulted in higher levels of commitment to ensuring appropriate and equitable computer use in schools.[19]

Peer support

Friends and peers also play a role in students' interactions with computers. Especially in adolescence, girls are particularly sensitive to perceptions of themselves in terms of social acceptance. Sanders found that one reason girls were reluctant to join computer clubs was because their friends weren't there.[20] Therefore there is a need for girls to be supported and encouraged in their use of computers, for example, a girls' computer club or class period. In addition, peer training in which students, especially females, help and support each other in using classroom computers can make learning to use a computer a more comfortable and fun experience.

Role models and mentors

Girls define themselves through social interaction, connecting and communicating with others, more so than boys do,[21] and therefore, are more likely to avoid the computer they may have experienced as rigid, rule-based, and isolating from others. There is a need for role models to counterbalance the perceptions and images that imply that math, science, and technology are not relevant to girls' lives. There needs to be recognition for women who actively participate in using computers, as well as mechanisms for these women to mentor and serve as role models for girls. For example, a career day can showcase the contributions of women in computer and technology-related fields. In addition, women involved in computers from a range of occupations, including graphic design, writing, desktop publishing, architecture, and engineering, can be invited to share their experiences and challenges.

Parental support

Positive parental attitudes can influence the attitudes of children toward computers. There is evidence to suggest that parents tend to be more encouraging and supportive of boys' learning in mathematics than of girls' and there is some initial evidence that this may be true with regard to computers as well.[22] At home, a mother can be an important role model for her daughter since girls become more interested in computers when they see their mothers using them.[23] Parents need to encourage both daughters and sons in the use of computers, in terms of the time they spend together, and the types of activities and interactions they have around the computer. Parents should also talk with their children about what they are doing with computers in schools.

Need for research

Researchers need to focus on equity issues in investigating the effects and implications of computer use in schools. As computers become part of our society, it is imperative that we consider equity issues in relation to a tool that has wide educational, economic, social, and political impact.

While relatively few interventions exist, there is a need for review and dissemination of effective programs, more information on how interventions are working, why they are working, and how they could be adapted for other settings.

Rethinking gender equity in learning with computers

Achieving gender equity with respect to computers and learning is a challenge and requires the commitment and efforts of many players—teachers, school personnel, peers, parents, curriculum and software developers, educational researchers, and gender equity program developers—in promoting equity and changing the climate for computer equity in schools and in society. In addition, gender equity in learning with computers requires attention in a number of dimensions, including how computer access is determined and allocated, how computers are used, how the learning context is structured, how teachers interact with students around computers, how students interact with each other using computers, how parents value and support their children's use of computers, and how society depicts computer users. Often, equity issues are an "after-the-fact" or misunderstood consideration. But given what is known about gender bias in learning with computers, equity issues need to be an integral part of designing and planning effective education for students.

Equity issues need to be an integral part of designing and planning effective education for students.

Notes

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Maria-Paz Beltran Avery, author of "Reflections on the Intercultural Encounter" in the February 1992 issue, acknowledges the contributions of her colleagues at Interculture, Inc., in the definition of culture used in that article.

WEEA computer equity materials aid teachers

The Women's Educational Equity Act (WEEA) Program was one of the first programs to develop materials to enhance the math achievement of women. It continues to maintain this leadership by providing funds to explore the issue of gender equity and technology in various projects around the country.

WEEA projects

Using innovative methods, a 1991 WEEA grantee, Collegiate Science and Technology Entry Program (CSTEP) at Onondaga Community College, integrates computers into the curriculum. The program supports students of color and low-income students (average age 32 years) who are potentially interested in or are pursuing careers in scientific, technical, or health fields. Also a current WEEA grantee, the Mathematics, Science, and Computer Careers for Rural Women: A Model for Educational Equity Project at Enterprise State Junior College, Alabama, offers educational activities in the areas of math, science, and computer science to seventh- and eighth-grade girls from a mainly rural area.

The Women's Action Alliance (WAA) utilized a WEEA grant to develop *The Neuter Computer: Computers for Girls and Boys*. This publication offers insights into how and why to encourage computer use by girls and close the computer gender gap. In a national field test of this book, girls' computer participation increased 144 percent in one term.

The Project on Equal Education Rights (PEER) of the NOW Legal Defense and Education Fund, using WEEA and other funds, developed *Debugging the Program: Computer Equity Strategies for the Classroom Teacher*. The kit includes a handbook containing excerpts from four outstanding computer equity curricula: *The Neuter Computer: Computers for Girls and Boys; Off and Running: The Computer Off Line Activities Book*, by EQUALS, Lawrence Hall of Science, University of California at Berkeley; *Project MiCRO (Minority Computer Resource Opportunity)*, by the Southern Coalition for Educational Equity, Atlanta, Georgia; and *Pathways—An Introduction to Computers*, by Technical Education Research Centers, Cambridge, Massachusetts.

PEER's National Center for Computer Equity publishes the *Computer Equity Report* and other materials to help parents and community groups work for equity in their local communities. The center acts as a clearinghouse for information on model programs that have documented the effective use of computers in providing solutions to equity problems related to race, sex, and disability bias. It also serves as an advocate at the national level for planned investment in the future of all children through the equitable distribution of technological resources.

The Center for Educational Equity, a division of American Institutes for Research (AIR), received a WEEA grant to prepare a package of instructional strategies: *IDEAS for Equitable Computer Learning*. The package includes a survey for students to assess their computer experience at school and at home; an education self-assessment checklist; a resource paper on early childhood computer readiness for K-3 teachers; a paper on out-of-school computer access as an equity issue; and a bibliography on gender equity in computer use.

Continued p. 5, "WEEA computer equity materials"

WEEA Working Papers present in-depth discussions on cutting-edge issues in gender equity:

Teaching Mathematics Effectively and Equitably to Females $4.00 (#2744)

Building Self: Adolescent Girls and Self-Esteem $4.00 (#2745)

Legislation for Change: A Case Study of Title IX and the Women's Educational Equity Act Program $4.00 (#2749)

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The *WEEA Digest* is published by the WEEA Publishing Center, a project at Education Development Center, Inc., under contract with the U.S. Department of Education, Office of Educational Research and Improvement. Opinions expressed herein do not necessarily reflect the position of the U.S. Department of Education and no official endorsement should be inferred.

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- increase the active participation and achievement of girls and students of color
- create career choices for all students

Focus on STW

Trainings and Technical Assistance

The Center for Education, Employment, and Community (CEEC) at EDC, with its WEEA Equity Resource Center, offers trainings and consultations to help ensure equitable outcomes for school-to-work programs. CEEC is working with several states to plan effective school-to-work initiatives that integrate current research and best practice in education reform, curriculum development, and teacher and work-mentor training for all students. CEEC's approach is a unique balance of equity frameworks: academic knowledge, technical skill development, workplace skills (SCANS), and hands-on implementation. We assist in the challenge of adapting national skill standards and academic goals to local needs and then use local standards to shape the school- and work-based learning as well as the connecting activities of the school-to-work system. Call the WEEA Equity Resource Center today for more information.

Electronic Networks

School-to-Work Network

STWNet is an international Internet discussion forum on school-to-work transition, the U.S. Youth Fair Chance initiative, and all other STW-related issues. To subscribe, send the message *subscribe stwnet* to MAJORDOMO@CONFER.EDC.ORG (do not use a "subject" line).

Educational Equity List

EDEQUITY (Educational Equity Discussion List) is an international Internet discussion list focusing on theory and practice of equity in education in a multicultural context, for teachers, administrators, parents, students, and researchers. To subscribe, send the message *subscribe edequity* to MAJORDOMO@CONFER.EDC.ORG (do not use a "subject" line).

WEEA Digest

The following issues of the *WEEA Digest* offer easily accessible discussions of educational theory and research, field-based perspectives, and STW resources:

"The School-to-Work Opportunities Act: An Opportunity to Serve All Students"
"Mentoring in Educational Settings: Unresolved Issues and Unanswered Questions"
"Educating against Gender-Based Violence"
"Gender Equity in Vocational Education"

(Individual copies of the digest are FREE)

New STW Resources

School-to-Work: Equitable Outcomes

> "Brings forth gender equity in school-to-work as a key component in the success of program implementation."
>
> —Gloria Smith, State Equity Supervisor

Can school-to-work programs succeed in recruiting, retaining, and helping all students—girls and boys, students of color, students whose first language is not English, students with disabilities, and teen parents? *School-to-Work: Equitable Outcomes*

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- looks at specific equity and diversity issues in school-to-work
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This exciting new kit offers a variety of resources that will enhance and strengthen school-to-work programs. Complete with articles that examine the role of equity in school-to-work and skill standards; activities and guidelines for school- and work-based learning; school-to-work fact sheet; information on key programs and publications and on disaggregating data; and WEEA's invaluable STW resource booklet, *School-to-Work: Equitable Outcomes*. (#2766•$15.00)

Exploring Work: Fun Activities for Girls
Gender-role stereotyping and gender bias keep girls from exploring a broad range of career options at a time when they are most likely to begin shaping a career path for themselves. Written for and designed to be used by girls, *Exploring Work* contains over 50 pages of activities for girls in grades 6 though 8. Teachers, parents, and counselors will find this an invaluable career awareness resource, not only on Take Our Daughters to Work Day but as a career training tool to be used at home or in school any day of the year. For many students, these hands-on activities will give them a glimpse of career possibilities they never before imagined. (2772•$15.00)

School-Based Learning

- Help reach underserved populations
- Enhance technology education
- Create career choices

Add-Ventures for Girls: Building Math Confidence—Middle School
"Fun," hands-on activities expose middle school girls to the exciting world of math. Field-tested, real-world problems and discussions about role models help girls develop realistic expectations for math learning and careers. The activities and information on teacher-student interaction patterns, girls' learning styles, and the importance of parent involvement help teachers create an environment that makes math work for middle school girls. (#2710•$35.00)

Spatial Encounters: Exercises in Spatial Awareness
Provides stimulating activities to sharpen spatial visualization skills needed in so many workplaces. Useful in tech prep and applied academic courses, the exercises show applied skills in math, geography, acoustics, landscape architecture, and telecommunications. (#2434•$34.00)

Going Places: An Enrichment Program to Empower Students
With a focus on enrichment and hands-on, cooperative group learning, this intensive curriculum addresses the specific needs of potential dropouts. The program develops and builds their self-esteem, improves problem-solving and decision-making skills, and develops leadership skills—all designed to help students have a successful school experience. (#2713•$40.00)

Teaching Mathematics Effectively and Equitably to Females
Discusses the current situation of achievement history and trends, higher education experience, and gender research, and looks at student gender differences; explores learning styles and classroom behaviors, attitudes toward mathematics learning, mathematics course taking, and social expectations. (#2744•$4.00)

Gendered Violence: Examining Education's Role
A comprehensive look at all forms of violence as variations of a theme places education in the center of prevention efforts. By exploring the implications of gender-role socialization and the role of schools as carriers of the culture, *Gendered Violence: Examining Education's Role* offers a new framework for understanding the systemic and personal issues we must address in order to create schools and a society that affirm positive relationships rather than support violence. (#2758•$4.00)

Work-Based Learning

- Build effective workplace mentoring
- Strengthen school/business partnerships

Chart Your Course: Career Planning for Young Women and
Building Partnerships: Career Exploration in the Workplace
A two-volume set to develop an innovative industry-based career exploration program for young women. Helps young women increase their self-awareness and better understand how their interests can suggest career paths. (#2703•$20.00 set)

Hand in Hand: Mentoring Young Women
These field-tested materials serve as guidance for mentors and students for their time together, record students' insights as they learn about themselves, and provide guidelines for setting up a program and establishing an active partnership between schools and businesses. (#2685 *Guide for Planning, Implementing, and Evaluating a Mentoring Program* $22.00; #2760 *Ideabook for Mentors* and *Student Career Journal* $18.00; #2742 *Student Career Journal* $7.50)

Executive Mentoring: Myths, Issues, Strategies
Used by major corporations, including Fluor Daniel and State Farm Insurance, *Executive Mentoring* provides guidelines as you develop your mentoring program and assume the role of mentor. This publication assesses mentors' needs, defines the problems mentors may face, and examines the role mentoring plays in an organization. (#2712•$10.00)

Connecting Activities

- Create links between schools and communities
- Provide effective career education resources for teachers and counselors
- Enhance services to underserved populations

Becoming Sex Fair:
The Tredyffrin/Easttown Program: A Comprehensive Model for Public School Districts

A favorite of gender equity specialists nationwide. This three-stage, systemwide training program helps you select, develop, apply, and evaluate techniques for improving gender fairness in schools. The manuals guide you through preparing for change, planning the inservice program, and revising the curriculum. (#2006•$64.00 set)

Steppin' Up and Moving On:
A Career Education Program for the Urban, Noncollege Bound Student

A comprehensive program designed to expand the career options of urban students of color, especially females, who choose to enter the work force immediately after high school. The model curriculum, which was developed, field-tested, and refined in the classroom, presents a range of creative and varied activities, interest assessments, resumé analysis, and career game exercises. (#2435•$9.50)

Choosing Occupations and Life Roles

Too many students choose careers on the basis of romantic, idealized, and stereotyped views about "appropriate" occupations. This valuable four-volume guide for teachers and counselors combats stereotyped thinking about career selection and helps stimulate informed, unbiased choices. (#2516•$56.00 set)

Barrier Free: Serving Young Women with Disabilities

Provides a concise, accessible, step-by-step training manual to help groups provide services to teenagers with physical and sensory disabilities. The focus is on including young women with disabilities in the same programs and activities provided for nondisabled youth. (#2732•$10.00)

Single Mother's Resource Handbook•Guía de Recursos para la Madre Sola

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Additional Resource Organizations

School-to-Work Outreach Project
Institute on Community Integration
University of Minnesota
101D Pattee Hall, 150 Pillsbury Drive, SE
Minneapolis, MN 55455
612-626-8155

The School-to-Work Outreach Project at the Institute on Community Integration (UAP) is a nationwide, three-year project funded by the U.S. Department of Education. This project assists and supports school-to-work initiatives through the identification of exemplary school-to-work models/practices/strategies that include students with disabilities.

Office of Special Education and Rehabilitative Services Programs (OSERS)
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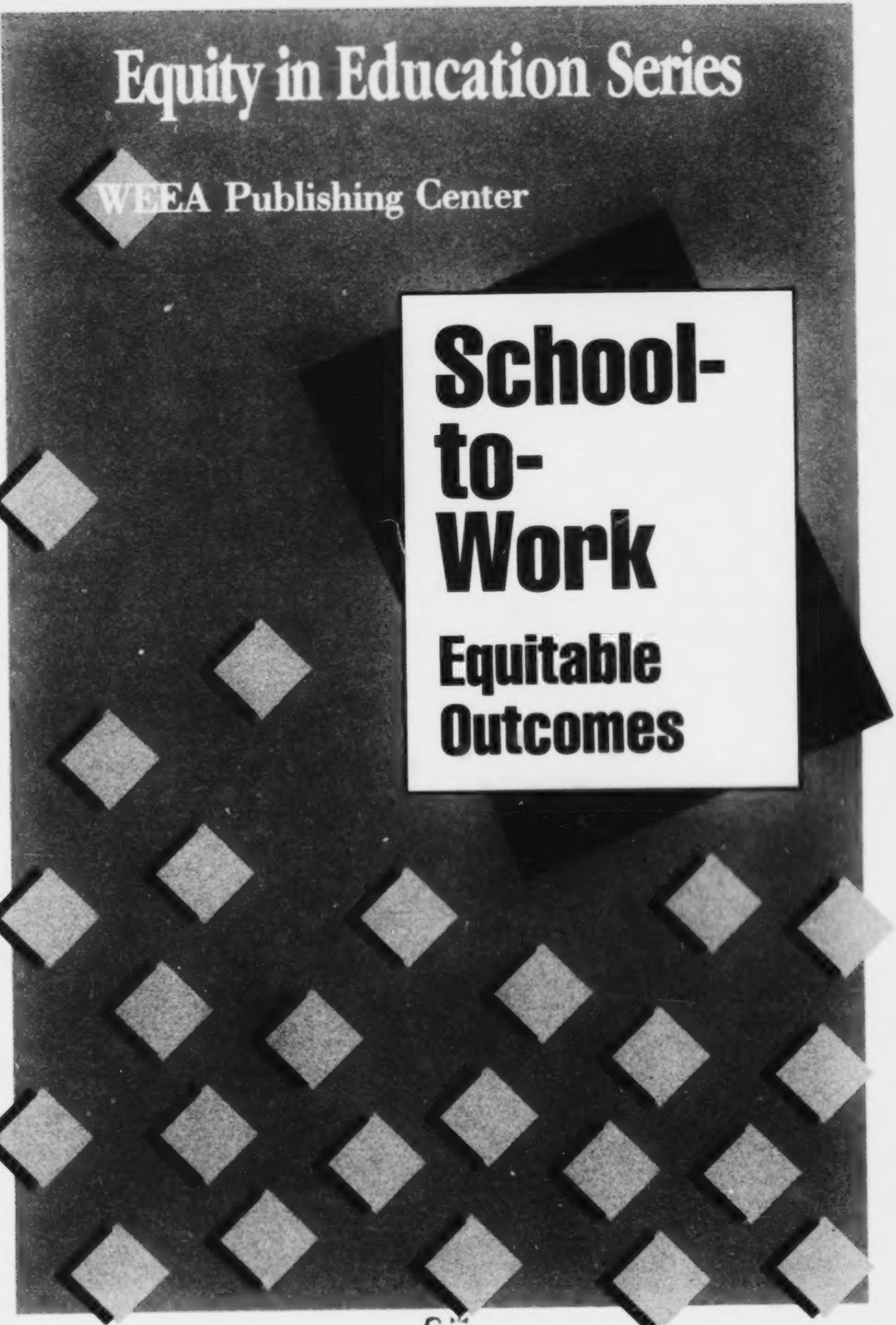

Equity in Education Series

WEEA Publishing Center

School-to-Work

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Education Development Center, Inc.

The material contained in this booklet is a compilation of excerpts from the following materials published through the WEEA Publishing Center:

"Beyond Equal Access: Gender Equity in Learning with Computers," *WEEA Digest*, Education Development Center, Newton, Mass.; **"Gender Equity: A Lens for Examining School-to-Work Issues,"** WEEA Publishing Center, Education Development Center, Newton, Mass.; **"Gender Equity in Vocational Education,"** *WEEA Digest*, Education Development Center, Newton, Mass.; ***Hand in Hand: Mentoring Young Women,*** Center for Sex Equity, Northwest Regional Educational Laboratory, Portland, Oreg.; **"Mentoring in Educational Settings,"** *WEEA Digest*, Education Development Center, Newton, Mass.; **"STW and Gender Equity: Opportunity for or Barrier to Economic Parity?"** WEEA Publishing Center, Education Development Center, Newton, Mass.

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The activity which is the subject of this report was developed under a contract from the Department of Education, under the auspices of the Women's Educational Equity Act. The WEEA Publishing Center operates under contract #RP92136001 from the Office of Educational Research and Improvement (OERI). However, the opinions expressed herein do not necessarily reflect the position or policy of the Department of Education, and no official endorsement by the Department should be inferred.

1995
WEEA Publishing Center
Education Development Center, Inc.
55 Chapel Street
Newton, Massachusetts 02158-1060

Editing by Pat Boland
Design by Julia Potter

School-to-Work
Equitable Outcomes

WEEA Publishing Center

Education Development Center, Inc.

Contents

Introduction 1

What Is School-to-Work? 2

The School-to-Work Opportunities Act 4
Equity and STW 5

Links between STW and Gender Equity 8

Equity Guidelines for STW 10

Implementing Gender-Equitable STW 11

Work-Based Learning 11
School-Based Learning 14
Connecting Activities 18

Equity Resources 20

Strategies 20
Equity-Related Competencies 21
Equity Checklist 23

Notes 25

Readings and Resources 26

Introduction

For the past decade, school reformers, educators, parents, students, business, and community have agreed that our schools must be fundamentally transformed. When we examine education reform from the perspective of "who benefits?" we link the role and purpose of our educational system to the kind of society we want. School-to-Work (STW) is one of the latest attempts to reform education. While an important aspect of STW is providing the knowledge, skills, and attitudes to help the nation and our students survive economically, that is not its only purpose.

STW initiatives also promote high standards, high expectations, and equity and fairness for students from a wide range of experiences. Placing the diversity of our students at the core of our planning helps us keep the purpose of education firmly in mind within STW, as well as in all of education reform. This booklet looks at a specific part of that diversity—gender in a multicultural context—in order to help educators, private industry, parents, and policymakers incorporate equity into their STW programs.

What Is School-to-Work?

In its broadest vision, STW creates partnerships between the educational system and the workplace. STW can create access to the traditional routes to academic and economic success for students who have previously been locked out. STW can introduce students to a wide range of future employment options, including but not limited to careers in technology. It can provide teachers and students with a better understanding of the demands and excitement of the workplace. And it can provide opportunities for more students to enter and succeed in higher education.

STW programs have the potential to respond to an important truth about how students learn. *Students learn in different ways.* Most students learn well from a combination of both reading, and experience, but for individual students, that combination may vary. Some learn better in more traditional classrooms where learning focuses on reading, writing, and conversation. But many other students learn better through experience. They learn by *doing*, whether it is applying chemistry in a neighborhood-based project, tutoring a younger student while studying about education, or performing hospital tasks that relate directly to mathematics and science. These experiences link students—whether they will go to college or directly to the workplace—to a broader sense of the workplace and highlight the relevance of their studies to their lives beyond high school. For many students, these hands-on work experiences give them their first glimpse of a range of career possibilities they never before imagined.

STW programs can offer not just cognitive understanding but a firsthand, concrete experience of the skills, tools, tasks, time lines, and pressures involved. The realities of a job often differ from the ideal perception of the job. In a real medical setting students rapidly lose the Hollywood concept of a doctor and begin to think in terms of bookkeeping and the logistics of running an office, or 4:00 A.M. emergency room duty.

Each STW program must include three components:

- *Work-based learning* that provides a planned program of job training or experiences, paid work experience, workplace mentoring, and instruction in general workplace competencies and a range of industry-specific elements
- *School-based learning* that provides career exploration and counseling, instruction in a career major, a program of study based on high academic and skill standards, at least one year of postsecondary education, and periodic evaluations of students' academic strengths and weaknesses
- *Connecting activities* that coordinate the involvement of employers, schools, and students, match students with work-based learning opportunities, and train teachers, mentors, and counselors

Partnerships

Whenever a school and business are in proximity—and that is almost everywhere—the potential for a partnership exists. Where businesspeople and school personnel have recognized the ways in which partnerships can be mutually beneficial, they are proliferating. The partnership programs vary greatly, as do their benefits. For example, a company may subsidize a concert series for a neighborhood school district to provide students with exposure to the fine arts. Another company might provide speakers to talk to various classes about their occupations and to act as role models for students. Career fairs, work-experience programs, seminars for teachers about the business world, and a sharing of facilities and equipment are only a few of the ways schools and businesses work together.

Women and the Economy

In the United States most women continue to work in low-wage, dead-end jobs. European American women with five years of postsecondary education earn 69 cents for every dollar earned by males with the same amount of education.[1] For African American women this ratio is only about 58 cents; for Hispanic/Latina women it is 54 cents.[2] Since only 4 percent of U.S. families today fit the old model of man working outside the home, woman working in the home, and two preschool children, the economic need for women to work is clear.[3] Women contribute significantly to the family income in two-parent households: In white families women contribute 34 percent of the family income, in African American families, 50 percent, and in Hispanic families, 40 percent. The number of female-headed households continues to rise, and their earning power is significantly less than that of two-parent households; 47 percent of white female-headed households and 72 percent of African American female-headed households live in poverty.[4]

In the ten years between 1995 and 2005 women will comprise almost half the work force, with women of color accounting for the greatest increase in number. Of the 54 million employed women in the United States, 75 percent work full time. Women, like men, work because they have to. Fifty-nine percent of married women are in the work force, bringing median family income for these households to $48,169, compared with $30,075 for families in which the wife has no paid employment. Single female heads of households, who are in the labor force in even greater numbers, earn a median family income of only $16,692.[5]

Despite the fact that more women are working and attaining higher-paying managerial and professional jobs, there are still many more women than men in low-paying jobs. The average weekly earnings of women who work full-time is only 75 cents for every dollar earned by men ($381 for women and $505 for men).[6]

The more education a woman has, the greater the chances she will look for work. And, both women and men with specialized technical training are likely to earn half a million dollars more in a lifetime than someone working at a low-skill, minimum wage job. With more families living in poverty—especially families headed by women—we need to develop models of education and workplace support that offer opportunities to help women and their families become economically self-sufficient. Ignoring this need will push more and more women and their families into an endless cycle of poverty. STW holds the potential to change this.

Skill Standards

Closely linked to STW are academic standards for various grade levels in science, mathematics, English, and other subjects and national voluntary skill standards for a variety of industries. Both can help improve classroom and applied learning by providing a problem- and performance-based approach that requires teachers and students to apply rigorous academic knowledge to real situations. The very best standards will

- *engage stakeholders* from industry, education, and the community in the design and validation process—developing a common language and respect for the contributions of each sector
- *encourage restructuring of learning*—with a focus on student mastery of both technical and academic skills through problem solving
- *create a framework* for using alternative assessment tools, such as portfolios, products produced, oral reports, and research projects, to measure the new demands of high-performance workplaces
- *serve as a guide* for the professional development of workplace mentors, teachers, and workplace supervisors—all of whom will be engaged in helping learners succeed
- *promote flexibility* about where learning takes place—drawing on the very best mix of workplaces, community settings, and schools
- *hold everyone accountable* to a higher level of student achievement for all students—promoting effective teaching and learning strategies such as cooperative and team learning and appropriate use of new technologies
- *provide students with opportunities* to be engaged citizens in a variety of settings

The School-to-Work Opportunities Act

The School-to-Work Opportunities Act, Federal Public Law 103-329 (H.R. 2884), was signed into law in May 1994. Implications for gender equity are woven throughout the act, and opportunities abound for the development of comprehensive partnerships and curricula that address content, pedagogy, student assessment, and the infusion of equity and diversity considerations. For example, the intent of the act is "to increase opportunities for minorities, women, and individuals with disabilities, by enabling individuals to prepare for careers that are not traditional for their race, gender, or disability." "All students" are defined as both male and female students from a broad range of backgrounds and circumstances, and "career guidance and counseling" programs are to be those that develop career options "with attention to surmounting gender, race, ethnic, disability, language, or socioeconomic impediments."

The act allows programs to address local needs and respond to changes in the local economy and labor market. States and localities can build STW systems upon existing successful programs, such as youth apprenticeship, tech-prep education, cooperative education, career academies, and school-to-apprenticeship programs. The legislation also promotes the coordination of state, local, and other federal resources to enable the programs to continue when STW funds end. The act encourages the active and continued involvement of local business, education, union, and community leaders.

Equity and STW

Supporters of STW initiatives see them as a way to involve business and industry in redesigning education to meet the needs of the future; critics, however, worry that business and industry will define education in terms of their own employment requirements rather than a full range of students' economic, social, and civic needs. While many hold a vision of STW as a new concept in education reform, others describe it as a way to get "the forgotten half" into the work force. While some see STW as an opportunity to broaden access to higher education for many students of color and poor students, others view higher education solely in terms of community colleges and technical programs.

Those concerned with equity cannot afford to wait; it is critical that equity concerns become central to this national debate. We need to enter the debate and contribute the lessons we've learned in other equity arenas. We can become full partners in an effort to remove educational and economic barriers for women, people of color, and people with disabilities. Together we need to examine

- the ability of systems to recruit, retain, and bring success to female students, male students of color, students whose first language is not English, and students with disabilities
- whether STW channels students to high-wage, technology-related occupations, providing little or no access to other careers such as law, education, or the arts
- whether the focus on local job market needs may not adequately take into account the rapidly changing economy or the mobility of individuals within the United States
- how, as a new partnership between education and employment, STW programs can become a mutual partnership in which both education and employment are transformed, instead of being driven solely by the needs of business

If STW programs are for everyone, they need to pay particular attention to the needs of individuals within specific groups—those who are female, are of color, have disabilities, speak a language other than English, or are teen parents. We are at a crucial point in the development of STW, a point where we can draw together the best learning and experience from education, equity, community, and the workplace. As we bring this expertise together, we can develop a new model—disaggregating the data, evaluating our efforts, and refining the work in progress. A rigorous look at how the program works for all students—for each student—provides the opportunity to build a stronger model.

Vocational Education

Because STW is grounded in successful career preparation and apprenticeship programs, there may still linger a misconception that it is a vocational education program or that it is not for all students. We therefore run the risk of falling into old assumptions or stereotypes that will work against the full participation of all students. If a program is perceived as one for "the forgotten half" it will become another tracking system despite the best of intentions. STW needs to build an inclusive infrastructure for human development and productivity. The benefits of a fully functioning STW system can be recognized as benefits for all students.

Students with Disabilities

The School-to-Work Opportunities Act, the Americans with Disabilities Act, and other legislation all require students with disabilities to be included in education. For STW, this opens up a new set of questions about creating the least restrictive environment and providing the necessary transportation, support services, and inclusion.

Given their off-site work experiences, STW programs need to pay particular attention to each student's specific learning style and level of ability to ensure the best match. For instance, students who have attention, behavior, or motivational problems may learn better in a controlled environment in which behavior management techniques can be instituted.

While openness to students with disabilities helps teachers and the workplace staff recognize that students with disabilities are useful members of society, this recognition needs to be accompanied by changes in instructional strategies. Staff in STW programs need to adapt instruction to the students' backgrounds and ability levels and to pay attention to the attitudes and behaviors of the other students or workers on site. Any effective STW program will include training on disabilities for both educators and worksite staff.

Female students with disabilities face hurdles both because of their gender and because of their disabilities. Young women with disabilities do not receive either the quality or quantity of vocational education that male students with disabilities receive. Vocational training for females falls mainly in the low-paying service sectors, such as food service and office work, whereas that for males falls mainly in skilled professions, like construction.

Students of Color

As people living in a multiracial society, we need to examine the cultural messages we receive about the wide variety of cultural and ethnic groups that make up the United States. Hidden, subtle, and all too often negative messages and stereotypes are omnipresent. These messages may seem legitimate because they come from recognized and institutionalized sources such as television, film, books, and schools.

Being American Indian, Asian American, African American, or Hispanic within U.S. culture is often vastly different from the experience of being white. Racism, segregation, and stereotyping can negatively influence a student's achievement in school, or participation in a STW program, especially when staff, agencies, or administrators lack sensitivity to these factors and their influence on the participants.

STW staff must become familiar with the issues that affect student attitudes and behavior. Some of these issues affect communication between staff and students and can create obstacles to a student's ability to learn and achieve. An awareness of, and sensitivity to, differences in values, attitudes, and approaches to problems will help improve cross-cultural communication. It is important to address these differences by acknowledging them and sharing concerns rather than by placing the onus for being different on the student.

Students Who Speak English as a Second Language

STW programs need to pay attention both to the language needs of students who speak English as a second language and to their cultural assumptions and experiences. Effective recruitment, counseling, site placements, and support programs will often include materials in the student's native language as well as English, and give particular attention to increasing the student's proficiency in English while continuing to value their primary language. It is often through their primary language that students who speak English as a second language gain their first and deepest understanding of concepts they will later want to express in English.

Teen Parents

As an important target population in STW, teen parents have specific needs that STW must address directly if these students are to be served effectively. Their needs include child care and transportation, housing, and a strong support system. Teen parents may not be able to participate in STW programs because they live below the poverty level, have not completed high school, and/or lack a comprehensive academic plan.

Links between STW and Gender Equity

The term *gender equity* describes an environment in which girls and boys, women and men are given the tools to make choices based on their abilities and talents, not on the basis of stereotypes and biased expectations. Such an environment brings about freedom from favoritism based on gender. The achievement of gender equity enables women and men of all races, ethnic backgrounds, and abilities to develop skills needed in the home and in the paid work force, skills that are best suited to an individual's needs, informed interests, and abilities. It opens economic, social, and political opportunities for all people. It fosters mutual trust because persons of both sexes are unrestricted in their roles. The promotion of gender equity in vocational education involves creating an educational environment that allows students to *choose* from the gamut of vocational programs and careers, to *enter* those programs, to *participate* in them fully, and to *benefit* from them—all without regard to gender. This concept needs to be expanded to nonvocational classrooms and work-based learning programs.

Gender Stereotyping and Career Expectations

Much of the early work in vocational education and nontraditional education addressed deeply held stereotypes about appropriate careers for males and females. Hundreds of programs around the country, supported by affirmative action and Title IX, pushed for the inclusion of women and girls in nontraditional careers. These careers—in the skilled trades, crafts, engineering, and construction—were opportunities for high-wage, flexible careers.

> It is rare for women to be actively excluded from vocational and technical programs or from the jobs themselves. Instead the status quo in recruitment, hiring, and job retention operates unintentionally to discourage women from considering these nontraditional careers.*

Similar concerns have surfaced about the participation of females in mathematics- and science-related careers. Mathematics and science are often the key to future economic and social well-being, opening the doors for careers in technology and many other high-wage professions. Unlike other nontraditional subjects, the need for advanced mathematics is now often an accepted reality for girls, their teachers, their parents, and future employers. Girls are taking more math and science classes in high school and are earning more degrees in related fields; but women are still not choosing mathematics and science careers. STW can help to correct this situation by building on the existing models for gender equity that have been developed in both nontraditional occupation (NTO) and math/science programs.

> If a woman ever wants to consider the option of self-reliance and true personal independence, she has to acquire practical abilities. Personally, the most tangible effect of my learning to work on cars, other than making more money, has been the confidence I have gained about doing tasks that would usually only be assigned to men, things like fixing a toaster, replacing a stove pipe, etc. There's a lot of freedom in that.[9]

Nontraditional career programs and math/science initiatives for girls also have lessons to share with STW about the impact of gender-role stereotyping. Gender-role stereotypes on the part of students, teachers and counselors, parents, employers, and work colleagues have long played a role in determining whether students see a career as open and inviting or as unattainable and hostile.

Expectations that certain careers—such as construction, mathematics, or bioscience—are "for boys" whereas other careers—such as teaching, nursing, or administrative support—are "for girls" are often unconscious or unspoken. However, they continue to shape the teaching and counseling methodologies of schools, guide parents to push boys into mathematics and science, and shape a workplace culture that does not support women in their dual roles as workers and parents.

This dual role most women play is often unrecognized by employers, colleagues, teachers, and counselors. But it is often a major consideration on the part of women and girls as they make career choices. Despite significant participation in the workplace, women are still expected to be the primary nurturers within the family.

> I think women need to consider nontraditional occupations if they are ever to have any real political power. High-level decisions are made these days on the basis of technical advice, whether about energy projects or production levels in industry. You can't take a whole group that is ignorant of technology and expect them to have much power or influence on these vital questions.[10]

The expectation that this "women's work" should not affect work continues to guide the structure in the workplace as well. Women must often choose between jobs that pay less but offer the flexibility to be home with children after school (since few affordable day-care options exist) and jobs with better pay that require significant involvement, but risk penalties. In addition, the lesson of custody hearings in which ex-husbands sought (and gained) custody of their children by claiming that the mother was working too much has not been lost on women and girls.

These messages continue to tell women that the workplace and society frown on their full participation. Until we begin to change the expectations not just of female students but also of their male counterparts, teachers, counselors, and employers, no program will change the economic reality for most women. The workplace must also change to reflect the changing needs of workers and become both supportive of women and "family friendly."

Equity Guidelines for STW

The key to understanding the implications of gender equity and equity for all students within STW is to build a dialogue within the STW community incorporating the rich expertise and experience of work in nontraditional occupations, math and science for girls, and other equity programs. As states and communities begin planning and implementation, equity specialists can raise a series of key questions to help infuse equity into the process, such as the following:

- How can we help ensure that all students in the programs are *provided with options leading to productive and rewarding futures?* What does it mean to say that STW is for all young people? Is it designed to help all students? How does STW use career exploration for all students? How do we ensure that STW explores professional careers, offers career ladders, and broadens the concept of work for all?
- *How do we ensure equal access to STW?* What do student demographics tell us about who is recruited, and to which programs? What is the retention and success of individuals in a specific grouping—European American males/females, African American females/males, Hispanic males/females, students with disabilities, and so on? Who is going on to community college, technical college, or university?
- *How are programs conducted?* Is the program structured on the basis of proportional representation of all groups found within the school community? If not, how can this be corrected? Does it offer a career ladder option and a college option? How are students supported in the program? Does it include training on the "right to know" law? Does it have policies and procedures regarding sexual and racial harassment in both school-based and work-based components? How are workplaces supported and monitored to encourage equity? What adjustments need to be made to involve students with disabilities? How are the needs of students whose first language is other than English addressed? How does the STW program reach out to and include the active participation of parents?

Implementing Gender-Equitable STW

> Our counselor said that besides needing to learn traditional book things, we need to learn things about ourselves. . . . We will be learning what our own interests are, what we like and dislike, what we value and how they might tie into our future work, career, and lifestyle. I had no idea that high school was going to help me look at myself as a person.[11]

All students benefit from school and work learning environments flexible enough to accommodate their individual needs. Young women in particular need attention to develop high self-esteem and improve their academic achievement. The following teaching and learning strategies can enhance learning for all students, especially girls:

- Individualized and self-paced instruction based on students' strengths and weaknesses
- Short-term attainable goals
- Team-teaching (including community and business people)
- Educational technology: computer-assisted instruction, video, long-distance learning
- Frequent academic assessment, testing, and intervention
- Peer teaching, tutoring, counseling, and support
- Access to resource labs and centers
- Matching teaching to learning styles

Work-Based Learning

Work-based learning, one of STW's three major components, provides fertile ground for ensuring an equitable STW experience for all. However, traditional models of learning in workplaces such as cooperative education, workstudy, or internships are sometimes relabeled STW programs without the level of critical review STW requires (for example, developing a seamless system for grades K–14, or linking efforts to the community or economic development). These programs need to be reexamined and held to criteria that define equitable programs. Such criteria might involve the following questions:

- Is the work-based learning experience based on industry skill standards agreed upon or adopted by local firms and made public in advance to all students?
- Does the work-based learning experience expose students to a variety of departments, processes, and areas, including all aspects of the industry and allowing for a range of career choices?

- Are students encouraged to focus on specific skills as they experience U.S. workplaces firsthand?
- Are students monitored and evaluated by workplace supervisors for what they have learned in the workplace?
- Is there a clear connection between what is learned in the workplace and what is learned at school?
- Are students informed and supported in relation to their rights as workers (on harassment, for example)?
- Are students required to develop a research activity to extend their learning beyond the "hands on" skill development? This sort of requirement would give students a better understanding of how the industry functions and how each department or component impacts others in the work process.
- Are coworkers prepared to help students "learn" in the workplace?

Models of Work-Based Learning

Project SMART in Cleveland, Ohio, is a youth apprenticeship program that combines school- and work-based learning to help students make the transition from school to work. The Shadowing Program is one of many steps designed to accomplish this goal. The eleventh-grade intensive shadowing program, based on locally developed industry standards for manufacturing, is designed to introduce each student to the manufacturing process and several related departments. Learning does not focus on any one machine, operation, or job but rather provides some in-depth training in each of six different departments. Students come away from their work-based learning experience having had opportunities to practice industry skills and knowing more about the production process and all the departments that support it, as well as what areas they might choose to specialize in after this experience.

In Operation Breakthrough! teachers, administrators, employers, trade unions, parents, students, and the school board in Beaumont, Texas, come together to increase dramatically the number of young people who are prepared to enter technical occupations or further their education in math- and science-related fields. Operation Breakthrough! is guided by several expectations. Employers and workers expect teachers to learn about the nature of work by learning about workers, finding out about their concern for quality, gathering information about employability skills, careers, and understanding a few basic principles of workplaces. Employers also expect teachers to transfer what they learn at the worksite into a meaningful classroom experience for students and to provide employers with follow-up information.

Teachers in turn expect employers to help them in this learning process by sharing information about the company and about workers, showing them images of the workplace and examples of how learning there is integrated and used, and helping them learn about industry training and how employers use assessment. Teachers also expect to apply what they have learned with students, sharing their insights into what is going on in industry, conveying business and industry perspectives, and conducting follow-up activities.

Mentoring

Mentoring programs for students are generally designed with the goal of helping them develop either strong academic or vocational skills and contacts. Mentoring experiences for faculty are more often designed to help educators adjust more easily to a new position—as in the case of pairing new teachers or administrators with more experienced colleagues—or to help them gain the skills and contacts to move up and out of their current jobs.

Students who have mentors are more likely to be offered full-time jobs if they apply for them. This possibility counters the tendency for students to be satisfied with part-time work or to be channeled into work unrelated to their career interests. For women in underrepresented occupations, mentors can combat the isolation and fragmentation they experience by strengthening their bonds of friendship and networking.

Cross-Gender Mentoring

Should the mentoring process differ for people in the same organization, depending on their race or gender? Mentors of the same ethnicity as their protégés can often offer added benefits, especially for students of color. Other research suggests that cross-gender and cross-ethnic mentoring partnerships add other benefits. For instance, when the mentor is a white male and the protégé is not, the protégé may have an opportunity to learn more about those who currently run educational institutions.[12]

Some research suggests that men and women are inclined to assume stereotypical roles toward one another in work settings.[13] These roles are defined by assumptions and expectations concerning appropriate behavior for each sex. To reduce the uncertainty, ambiguity, and anxiety created by the emergence of cross-gender work relationships, men and women rely on what is familiar. In doing so, they sometimes unknowingly assume traditional roles they learned from past situations, roles that tend to constrain behavior and reduce individual competence and effectiveness.

People perpetuate stereotypical roles because these are what they know and are most comfortable with. In developmental relationships like mentoring, the challenge is to devise strategies for behavior that permit men and women to interact in a variety of appropriate ways within a given work context. In cross-gender developmental relationships, although women face dilemmas similar to those of their male counterparts, they also encounter others unique to being female in male-dominated organizations.[14]

For instance, concerns about the appropriateness of a particular behavior may appear unwarranted to a male mentor who does not understand that what works for a man may not work for a woman. (The same might be said about relationships across race and ethnicity.) Concerns about balancing work and family commitments are exacerbated for a woman who is simultaneously advancing her career and assuming the roles of wife and/or mother. These unique gender-related concerns may make it difficult for male mentors to empathize, to provide role modeling, and to identify with their female protégés in regard to these issues.[15]

School-Based Learning

Research such as the 1994 book *Failing at Fairness: How America's Schools Cheat Girls* by Myra Sadker and David Sadker and reports by the American Association of University Women (AAUW), have pointed to new directions for the academic achievement of women.[16] As in all education, specific gender equity issues need to be addressed in STW.

Technology

Because developing familiarity and facility with computers is an important educational goal for *all* students, schools need to ensure equity in computer access, use, and outcomes. Given that the presence of computers in our schools and workplaces is almost certain to increase, we need to understand why inequities in computer use exist and to develop effective strategies that will ensure equal opportunities and equitable outcomes for all students in their interactions with computers.

Gender differences have been documented in both use of and access to computers; girls are more likely to use computers for word processing, whereas boys are more apt to do programming. Boys have significantly more positive attitudes than girls toward computers, finding them more "enjoyable," "special," "important," and "friendly."[17]

A computer gender gap usually starts becoming noticeable at the middle school level and widens as girls get older.[18] Gender differences are more evident in advanced classes than in introductory courses.[19] Girls tend to be less confident than boys in their use of computers, and both boys and girls perceive computers as predominantly in the domain of males. These attitudes contribute to lower female enrollments in computer courses and in varying levels of interest.

Computers are versatile tools, suitable for activities ranging from music to mathematics—including design, problem solving, writing, and planning. Because many students develop their impressions about computers in schools, it is important for the computer tasks and the software available to meet the learning needs of all students and show how the technology can solve problems, aid in decision making, and achieve goals that students consider important and relevant. Computers are not inherently biased, yet in the contexts they are used they can often take on characteristics that reinforce gender bias.[20]

One method to illustrate the computer's usefulness in problem solving and its relevance to many activities and subjects is for teachers to develop specific computer design or research projects for their students. Another teaching strategy that appears to engage females in the use of computers is structuring collaborative learning experiences. This finding is consistent with evidence that it is not only what software is used in classrooms but how it is used that impacts student involvement with computers. There is some indication that collaboration may be a preferred work context for girls.[21]

Friends and peers also play a role in students' interactions with computers. Especially in adolescence, girls are sensitive to how they appear to others. They should be particularly supported and encouraged in their use of computers, for example through a girls' computer club or class period. Role models can counterbalance the perceptions and images that imply that math, science, and technology are not relevant to girls' lives.

Positive parental attitudes can influence the attitudes of children toward computers. There is evidence to suggest that parents tend to encourage and support boys' learning in mathematics more than they do girls'; and there is some initial evidence that the same holds true with regard to computers.[22] Parents need to encourage both daughters and sons in the use of computers and to ask their children what they are doing specifically with computers in schools.

Mathematics and Sciences

Much of STW focuses on emerging technology. Gender stereotypes in math, science, and technology can create barriers that leave girls out of the process:

- Mathematics and science are masculine endeavors.
- Mathematics and science abilities are based on innate talents.
- White women and some people of color are less capable in mathematics and science.
- Most jobs require little math or science knowledge.
- White women and people of color are not suited to scientific careers.

Too many white women and people of color have low self-confidence and low expectations for success in math and science. A self-fulfilling prophecy of underachievement by girls and people of color in mathematics and science may be operating, reflecting the lower expectations of parents and teachers. White women and people of color often have different learning styles from white males, but in spite of these differences, most classrooms still embrace the traditional techniques preferred by males. Women and people of color receive less attention and different kinds of attention from classroom teachers. These inequities are more pronounced in mathematics and science classes and thus have major implications for recruiting and retaining females in the emerging high-technology fields.

Science is taught as a fixed body of facts, principles, and definitions to be memorized. Science is divided into the separate disciplines, thus fragmenting students' knowledge and understanding. Schools lack the equipment, resources, and trained teachers to sustain quality hands-on science and mathematics experiences. Science and math textbooks may be out of date, and they may continue to use content, examples, and pictures that are stereotypically masculine. The links to the workplace and its use of mathematics and science are important; these links may serve to push for improved school programs and resources.

Guidance counselors steer white women and people of color away from mathematics and science coursework and careers. Parents adversely affect their daughters' view of math and science and, consequently, their career aspirations. White women and people of color lack real models and cannot see the relevance of mathematics and science to their lives.

Compared with adolescent males, adolescent females are much less aware of what occupations are open to them, and they also have lower expectations for their probability of succeeding in them.[23] One of the ten policy recommendations in a report by the National Center for Research in Vocational Education is that "school counselors must . . . '[lean] over backward' to avoid being influenced by stereotypes that pervade the entire culture when they offer educational and labor market advice to young women of all racial and ethnic backgrounds.[24]

*Career Guidance**

Career planning is a critical filter for future employment, and STW can benefit from what is known about when and how to begin planning a career. Larwood and Gutek[25] have identified five elements to consider in the development of any model of career planning for women:

- Career preparation
- Timing and age
- Opportunities available
- Marriage
- Pregnancy and child rearing

Women enter the career exploration phase at a variety of stages in their lives, and there is more variation in female patterns of career development than in those of their male counterparts. An appropriate model of career planning for women should take into account the differential effects of gender on choices and decision making as well as on patterns of career development. Expectations of the adult female role, including the "homemaker option," influence each young woman's decision-making process, and consequently, her choice of career.

Existing career paths may be shaped by unrealistic expectations that ignore the biological time limitations for childbearing. The responsibilities of the dual role of worker and mother affect the career development and upward mobility of women who choose to have families.

Current research on women's career development maintains that there are significant differences between men and women in this area. This research identifies four major distinctions:

- Role expectations differentially affect the choices of jobs for males and females.
- Husbands and wives do not equitably accommodate themselves to each other's careers; usually the man's job assumes primary importance.
- Parenting is not equitably shared by men and women; the role of mother requires more time and effort than the role of father.

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*Adapted from *Roles in Conflict: Women Preparing for Higher-Wage Technical Careers*, by S. McGarraugh, edited by M. Waterson, New York State Occupational Education Equity Center, Latham, N.Y., 1990. Used with permission.

- Women face more barriers in the workplace, including stereotyped expectations, discrimination, and harassment.

Career Strategies

Counselors can help females develop realistic career planning strategies by addressing the elements described above. Simply selecting and preparing for a career is not adequate planning for the dual roles that most women will take on. Females need to examine a more complex array of factors when making career decisions.

Consider the following strategies to incorporate women's individual needs:

- Develop an approach that substitutes individualized time lines for the more traditional "stages" models of career development. Each woman, regardless of age, is encouraged to develop a time line for her career goals, complete with resources and schedules. Young women who plan to have a family should consider career interruptions, flexible scheduling options, and the timing of their reentry.
- Direct women to evaluate potential careers in terms of their particular lifestyle goals as well as their interests and abilities. Examine salary, benefits, additional training or educational opportunities, overtime, and travel; consider their impact on the current or anticipated lifestyle. Look for data that reveal the numbers and patterns of representation of women in the field.
- Provide appropriate role models who can speak to girls about the real opportunities for women in the field. Look for women whose age and ethnic background match that of your students. Structure individual and group sessions with the role models in a way that facilitates sharing both personal and professional experiences.
- Prepare women who select a male-intensive career for possible isolation, harassment, or other difficulties that may result from their minority status. Help these women identify the elements of risk taking in their choices and utilize activities and programs that prepare women for the challenge of pioneer status. Review the laws that protect women from sexual harassment and discrimination in educational institutions and in the workplace. Make available resources to help them develop preventive strategies or provide remedies for potential incidents.
- Identify various legitimate paths to a particular career goal. Emphasize the development of career ladders from an entry-level position to a more skilled or more responsible position. Encourage women to seek out employers who offer on-the-job training and tuition assistance programs for further education.

Increasingly, employers are placing value not on inputs, such as time spent in school, but on outcome-based criteria—demonstrated mastery of knowledge, skills, and behaviors required to do the job. New workers who meet these outcome-based criteria will not only be more likely to be hired for beginning-level jobs but will also be more prepared to work efficiently and to interact with their coworkers. Their solid grounding in the fundamentals of the industry will also better qualify them to acquire the additional skills and knowledge needed to advance to higher-level positions.[28]

Connecting Activities

No STW initiative can be successful without the full participation of all segments of the larger community. Each segment needs to be aware of gender equity, its relationship to the various segments, and the way in which they can become an integral part of everyone's work.

Family and Community Participation

Families and communities can be made to feel welcome through a concerted outreach effort. Ways to work with family and community include the following:

- Educate the community about the realities, priorities, and problems facing education and the changing nature of education in a global society.
- Work to improve communities' present perception of teachers and schools.
- Increase collaboration among government, industry, community, and schools.
- Increase the participation of families.
- Seek the active involvement and commitment of those families not currently involved in the schools and include them in the educational reform process.
- Use volunteers in the schools (parents, retired teachers, senior citizens).
- Increase the participation of business and community organizations in mathematics, science, and technology education.
- Develop more internships and apprenticeships for students and teachers in business, industrial, and medical settings related to scientific and technical fields.
- Expand science, mathematics, and technology summer camp programs for white women and people of color.
- Develop school-business partnerships to enhance corporate mentoring programs and other collaborative efforts in math, science, and technology.
- Bring scientists, engineers, technicians, and community experts with diversity training into the classroom to bridge the gap between education and actual applications.
- Develop closer working relationships between schools and community and professional organizations that offer out-of-school, extracurricular programs in math and science (for example, Girl Scouts).

Teacher Professional Development

In a time of education reform, teachers need to be prepared to assume leadership for these reforms. Teacher professional development is critical to this endeavor and is especially important as we link school- and work-based learning. One model for combining the exciting reality of the workplace with teacher professional development is the Industry Volunteers in the Classroom. In this model, classroom teachers leave their students for specific professional development activities throughout the year while industry volunteers replace them on a regular basis. Because industry volunteers have been most effective and comfortable when assigned to classrooms in pairs, such a project needs twice the number of volunteers as the number of classroom teachers involved.

Industry volunteers are encouraged to look for ways of making specific connections between their work and the classroom material and to design original lessons that build on those connections. They sometimes teach material specified by the classroom teacher as well. An industry volunteer model sets up a global partnership among local industries, schools, and educational support groups as well as a classroom partnership between two industry volunteers and a classroom teacher.

The experience industry volunteers share with students can lead to improved education and a better work force in the twenty-first century. When industry volunteers talk to students about their work, bring in demonstrations, or base lessons on their work experience, they make a significant impression on the students. While teachers can and do relate the importance of their subject knowledge to the work world, having industry volunteers bring their work into the classroom lends new meaning to the schoolwork.

Industry volunteers in classrooms not only offer students tangible evidence of the relevance of their school subject matter in future work, but can also provide role models of women and people of color in successful careers. They are also examples for students that there are interested adults who care about their progress.

Participating schools benefit from renewed, professionally stimulated teachers whose enthusiasm affects both their classes and their colleagues. The volunteers for their part gain increased awareness of the problems facing schools and an appreciation of the complexity of teaching. Such increased sensitivity helps make these volunteers informed, vocal advocates for education in their communities and workplaces.

Equity Resources

All of us—educators, equity specialists, and employers—need to rely on one another's expertise to ask the right questions and make STW partnerships really work. The following sections—Strategies, Student Equity-Related Competencies, and an Equity Checklist—offer suggestions from equity specialists for planning and implementing STW programs that meet the needs of students.

Strategies

The following strategies were suggested by Mary Wiberg, gender equity coordinator for vocational education in Iowa.

- Involve classroom teachers (academic and vocational education) in the development of STW programs.
- Involve businesses owned by women and people of color in the planning process.
- Involve community-based organizations that have worked with teen parents, gender equity programs, Girl Scouts, and others to understand how best to attract girls and to meet their needs.
- Train everyone—academic and vocational education teachers, counselors, administrators, employers, labor—in the intent of STW including the gender equity provisions.
- Involve elementary schools as well as middle schools to begin the process early—reaching parents and students in ways that help them value STW and nontraditional careers for students, before they are locked in to preconceptions.
- Hold special events for specific audiences—expand the idea of Non-Traditional Occupations (NTO) career fairs, provide role models, examine outreach, and target specific messages to girls, students with disabilities, the academically talented, and so on.
- Identify and provide the child care, transportation, or other support services that girls, especially teen parents, might need in order for them to be in STW.
- Encourage states to invite representatives from commissions on the status of women or other human rights and advocacy groups to participate in the planning.
- Identify resources that can assist in the training and technical assistance support for white women, people of color, people whose first language is not English, and persons with disabilities.

- Encourage states to establish a subcommittee on career guidance and counseling with membership that includes elementary, secondary, and postsecondary guidance staff and persons knowledgeable about NTO strategies that can be integrated into state plans.

Equity-Related Competencies

Student Equity-Related Competencies for Economic Self-Sufficiency and Equal Employment Opportunity are critical for the success of young women and men in today's world. These competencies are integral to program improvement initiatives in vocational education and are similar to the youth employment competencies established by private industry councils (PICs) for Job Training Partnership Act (JTPA) programs.

Barbara Bitters of the Wisconsin Department of Public Instruction developed a set of competencies for use in vocational education that can be applied to STW. Review the following equity-related competencies and consider which of them might be included in your STW programs.

General

1. Students will define and identify strategies to overcome role stereotyping, bias, and discrimination on the basis of race, gender, and disability.
2. Students will be able to define and give examples of "dual discrimination."
3. Students will identify and analyze societal attitudes about men and women, gender-role stereotypes and bias, and forms of gender discrimination.
4. Students will be able to recognize and neutralize role stereotyping and bias in educational materials.
5. Students will demonstrate the use of gender-neutral, inclusive language.
6. Students will develop a more positive attitude about the abilities of both genders, all racial and ethnic groups, and people with disabilities.

Work and Family

1. Students will identify the responsibilities associated with dual work roles—paid work and home and family work.
2. Both male and female students will identify changes in family structure and responsibilities and the need to develop complex, family-related skills.

Labor Force Facts

1. Students will demonstrate knowledge of historical changes in the labor force participation of males and females.
2. Students will identify historical barriers to equal employment opportunity.
3. Students will demonstrate knowledge that both men and women work for pay, in great numbers, for a long time and out of economic necessity.
4. Students will identify how role stereotyping, bias, and discrimination have contributed to occupational segregation in the U.S. labor market.
5. Students will demonstrate knowledge of how traditional women's work has been undervalued and underpaid.

Nontraditional Occupations

1. Students will be able to define "nontraditional occupations" and will identify positive and negative aspects of employment in nontraditional careers.
2. Students will identify nontraditional jobs for females and males and the skills needed on those jobs.
3. Students will identify some of the issues that arise when women/men work in nontraditional jobs.
4. Students will identify coping strategies to survive and thrive in nontraditional jobs.

Career Development

1. Students will identify how gender-role stereotyping and bias may limit opportunity in planning their own future.
2. Male and female students will demonstrate awareness of the total range of career and occupational choices.
3. Students will develop career development plans based on informed choice, labor market information, assessment of interests and skills, occupational exploration, and work experience rather than on factors related to stereotyping on the basis of gender, race, or disability.
4. Both male and female students will identify how emerging technology is influencing jobs of the future.
5. Both male and female students will demonstrate experience in how to prepare for, adapt to, and influence change in the labor force.
6. Students will identify reasons why both males and females must acquire math, science, and computer skills.
7. Students will identify how gender stereotyping, bias, and discrimination may affect career planning, occupation exploration and preparation, employability and job seeking, job retention and advancement, job benefits and professional development, earnings, financial planning and management, and entrepreneurship.
8. Students will identify and discuss employment skills that both males and females will need to survive and thrive in the future economy, including participative management skills, oral and written communication skills, assertiveness skills, teamwork skills, networking skills, cooperation skills, negotiation skills, flexibility skills, adapting skills, human relations skills, interpersonal skills, leadership skills, re-careering skills, coping skills for frequent and rapid change, and technological literacy skills.

Equity Checklist

This equity checklist is excerpted from *Equity Benchmarks for Vermont*, a 1994 publication developed by Joy Wallace, an equity specialist at the Vermont Institute for Science, Math, and Technology.

Curriculum and Climate

____ Every student, at every grade level, uses manipulatives, calculators, and computers in mathematics lessons.

____ Every student, at every grade level, uses science apparatus in science lessons.

____ My school library has books about the contributions of African Americans, American Indians, Hispanics, and Asian Americans in all subjects.

____ My school library has books about contributions to all subjects by people with disabilities.

____ My school library continually updates materials and seeks to replace biased, stereotyped resources.

____ I see evidence in my school of students treating each other with respect.

____ I see evidence in my school of teachers treating every student with respect as an individual.

____ Science and math classes are not tracked.

____ Textbooks, library books, and other curriculum materials are all reviewed to ensure they are inclusive, represent diversity, and encourage students to participate in learning.

____ My school seeks to update curriculum materials to ensure they are inclusive, represent diversity, and encourage students to participate in learning.

____ Courses are scheduled in ways that encourage student participation, (that is, scheduling conflicts do not limit enrollment in courses).

Assessment

____ Teachers use a variety of assessment strategies.

____ Teachers use assessment strategies that are sensitive to diverse student populations.

____ Assessment tools used in my school are unbiased for girls, limited English-speaking students, limited income students, and so on.

____ Standardized test scores for students at my school show no differences based on gender, income level, disability, race, or ethnicity.

____ If standardized test scores *do* show differences, my school is demonstrating increases in the rate of achievement for under-represented groups.

Professional Development

_____ My school offers professional development opportunities for teachers that focus on equity issues.

_____ Teachers and administrators in my school attend equity-related professional development opportunities.

Management and Governance

_____ My district has a policy supporting increased equity for students.

_____ My district has a plan that translates our equity policies into action.

_____ Equity policies and plans have been disseminated to all school board members.

_____ Equity policies and plans have been disseminated to all parents.

_____ Equity policies and plans have been disseminated to all teachers.

_____ My school has a policy statement about how equity relates to curriculum, teaching, and learning.

_____ All data collected by my district/school are analyzed by gender, race, ethnicity, disability, and income.

Community Outreach

_____ A review of sample outreach materials shows that they are inclusive (welcoming all family groupings, translated into languages other than English when appropriate) and free of stereotyping.

_____ Programs such as Family Math and Family Science are offered to parents.

_____ My school sponsors at least one activity per year designed to increase awareness of the need to recognize and address inequities.

_____ All materials developed by my school use inclusive language (that is, do not exclude single parents, do not use generic "he," and so on).

_____ All materials developed by my school use inclusive graphics.

_____ All data collected by my district/school are reported out to the public on a yearly basis analyzed by gender, race, ethnicity, disability, and income.

Access to Technology

_____ Computers are used by all students in science and math.

_____ Telecommunications supports learning in my school.

_____ All students have keyboarding skills.

_____ All teachers have access to telecommunications in my school.

_____ Every student can use word processing to write an essay.

_____ Every teacher can use word processing to write an essay.

_____ The principal and superintendent use telecommunications to link with the Department of Education and others.

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Organizations

American Vocational Association
1410 King Street
Alexandria, VA 22314
800-826-9972

Center for Education, Employment, and Community
Education Development Center, Inc.
55 Chapel Street
Newton, MA 02158-1060
617-969-7100

Coalition of Labor Union Women
1126 16th Street, NW
Washington, DC 20036
202-296-1200

ERIC Clearinghouse on Adult, Career, and Vocational Education
Ohio State University
1900 Kenny Road
Columbus, OH 43210-1090
614-292-4353 or 800-848-4815

ERIC Clearinghouse on Counseling and Student Services
University of North Carolina at Greensboro
School of Education
Greensboro, NC 27412-5001
919-334-4114 or 800-414-9769

The National Center for Research in Vocational Education
2150 Shattuck Avenue
Suite 1250
Berkeley, CA 94720-1674
510-642-4004

National Committee of Pay Equity
1126 Sixteenth Street, NW
Room 411
Washington, DC 20036
202-331-7343

Office of Vocational and Adult Education
U.S. Department of Education
600 Independence Avenue, SW
Room 4518
Washington, DC 20202-7242
202-260-9576

Opportunities Industrialization Centers of America
3224 16th Street, NW
Washington, DC 20010
202-265-2626

School-to-Work Opportunities Office
400 Virginia Avenue, SW
Room C-100
Washington, DC 20024
202-401-6222

Skill Standards Team Office
U.S. Department of Labor
200 Constitution Avenue, NW
Room 5637
Washington, DC 20210
202-208-7018

Women's Bureau (national office)
U.S. Department of Labor
200 Constitution Avenue, NW
Room S3002
Washington, DC 20210
202-219-6667

Educational Equity List

EDEQUITY (Educational Equity Discussion List) is an international Internet discussion list focusing on theory and practice of equity in education in a multicultural context. To subscribe, send the message *subscribe edequity* to MAJORDOMO@CONFER.EDC.ORG (Do not use a "subject" line.)

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School-to-Work Network

STWNet is an international Internet discussion forum on school-to-work transition, the U.S. Youth Fair Chance initiative, and all other school-to-work related issues. To subscribe, send the message *subscribe stwnet* to MAJORDOMO@CONFER.EDC.ORG (Do not use a "subject" line.)

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School-to-Work: Equitable Outcomes

A school-to-work program's ability to help *all* students succeed is crucial. The program must serve the needs of students who are female, are of color, have disabilities, whose first language is not English, or are teen parents. *School-to-Work: Equitable Outcomes,* outlines the School-to-Work Opportunities Act, explains the importance of school-to-work initiatives, describes how gender-biased messages influence girls' and boys' career choices, and teaches equitable techniques that support school-to-work programs.

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—Ed T. Little, Chair, National Coalition for Sex Equity in Education

"*A comprehensive overview of the need to integrate equity into STW efforts. . . .* [School-to-Work: Equitable Outcomes] *draws on existing programs and strategies that can enhance a STW program.*"
—Craig P. Flood, The Equity Center, Latham, New York

"*The Equity in Education Series is filled with pertinent information that is sure to assist classroom teachers, administrators, and the general community in understanding the issues surrounding equity in the classroom.*"
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facilitates a national expert panel on gender equity to surface exemplary and promising practice

holds equity forums to surface new concerns, promising practice, or guidelines for gender equity in violence prevention; teacher preparation; assessment and testing; STW; and math, science, and technology

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offers resource information to anyone interested in current research, individuals, or projects working in the area of gender equity

provides trainings that offer a framework of theory and practice to help schools, organizations, and communities understand and support equitable education for all students

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